



Operating Instructions

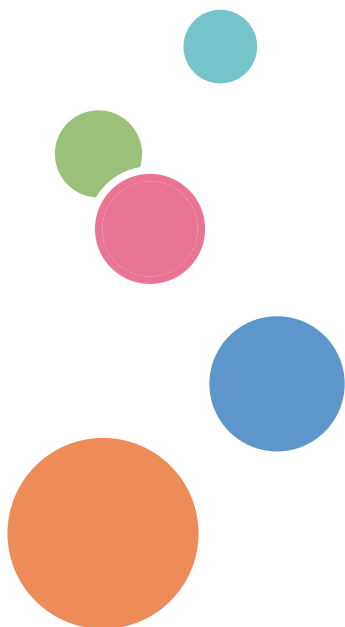


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Disclaimer

To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this machine, losses of the registered data, or the use or non-use of this product and operation manuals provided with it.

Make sure that you always copy or have backups of the data registered in this machine. Documents or data might be erased due to your operational errors or malfunctions of the machine.

In no event will the manufacturer be responsible for any documents created by you using this machine or any results from the data executed by you.



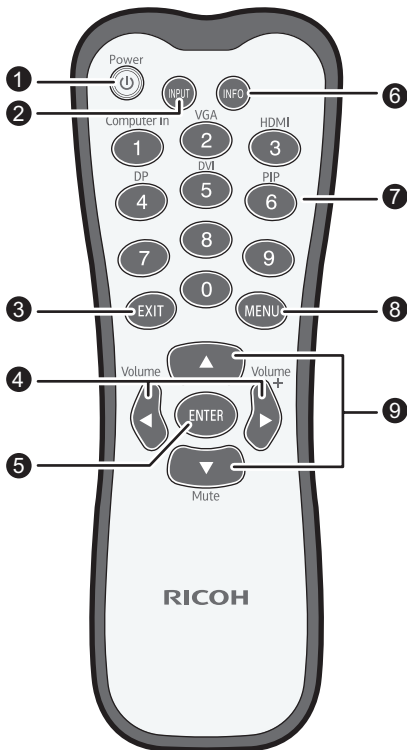
1. Using the Remote Control

This chapter explains how to use the remote control.

Names and Functions of the Remote Control Buttons

★ Important

- Do not put the remote control in the direct heat, humidity, and avoid fire.
- Do not drop the remote control, as doing so may cause the remote control to malfunction.
- Confirm there is no object between the remote control and the remote control sensor of the product.
- When the remote control will not be used for an extended period, remove the batteries.



DTW201

1. [Power]

Turns the machine on or off.

2. [INPUT]

Selects an input source.

3. [EXIT]

Returns to the previous menu or closes the On-Screen Display menu when the On-Screen Display menu is on.

4. [◀]/[Volume-]/[▶]/[Volume+]

- Scrolls through settings and options in the On-Screen Display menu.
- Turns down/up the volume.

5. [ENTER]

Confirms your selection or save changes.

6. [INFO]

Shows the current input source and resolution.

7. Input source buttons/[PIP]

- Numeric buttons perform as input source buttons.
- Numeric button (6) turns on or off the PIP function.

 Note

- [Computer In] is only available if the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display.
- [DVI] is not available on this machine.

8. [MENU]

Opens or closes the On-Screen Display menu.

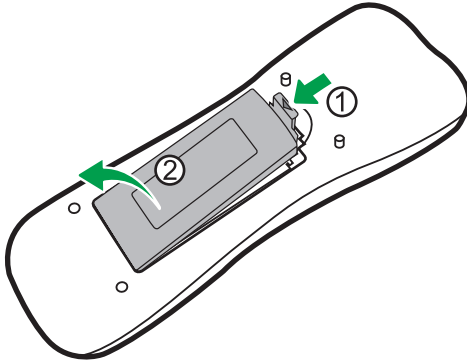
9. [▲]/[▼]/[Mute]

- Scrolls through settings and options in the On-Screen Display menu when the On-Screen Display menu is on.
- Turns on or off the mute function. Used to temporarily disable audio input on the machine.

Installing the Batteries into the Remote Control

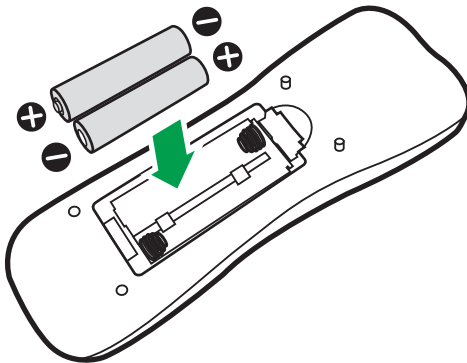
- When batteries fail to function, replace them immediately.
- There may be local restrictions on the disposal or recycling of batteries. Consult your local regulations or waste disposal provider.

1. Open the remote control battery cover.

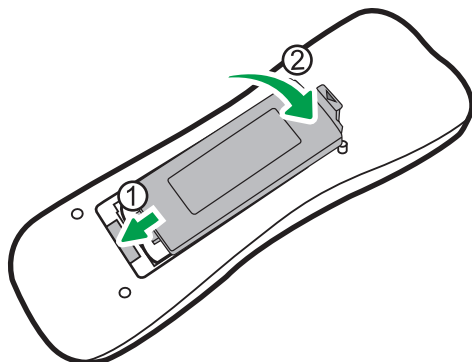


2. Insert the supplied batteries ensuring that the positive and negative marked battery terminals match the (+) and (-) marks in the battery compartment.

You should replace the supplied batteries as soon as possible.



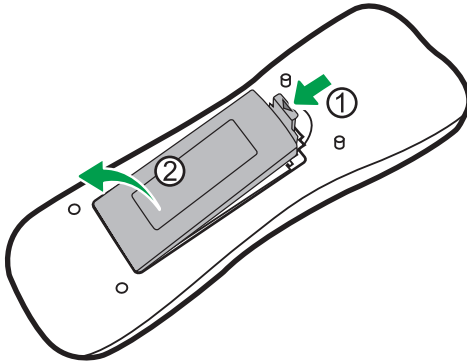
3. Refit the battery cover.



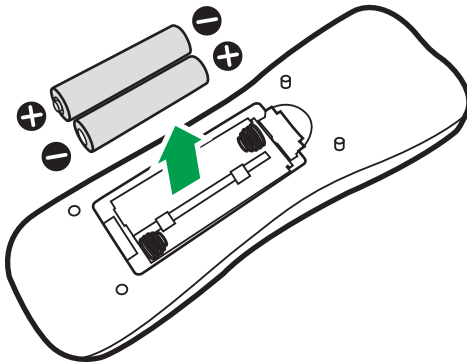
Removing the Batteries from the Remote Control

1

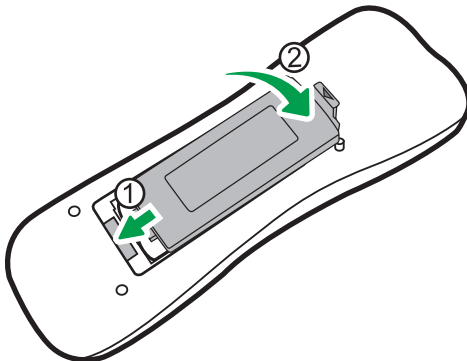
1. Open the remote control battery cover.



2. Remove the batteries.



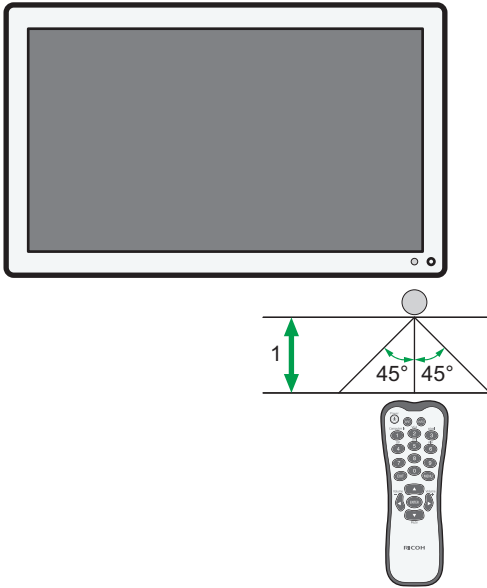
3. Refit the battery cover.



Remote Control Usage Tips

1

- Point and aim the top front of the remote control directly at the display's remote control sensor window when you press the buttons. The maximum distance for the remote control to operate properly is 5 meters (approx. 16.4 feet) from the top front of the remote control to the remote sensor window of the display.
- Do not let the remote control become wet or place it in humid environments (like bathrooms).
- If the display's remote control sensor window is exposed to direct sunlight or strong light, the remote control may not operate properly. In this situation, change the light source, readjust the angle of the display or operate the remote control from a location closer to display's remote control sensor window.



EAL010

1. Max. 5 m (16.4 feet)

2. Connection

This chapter explains how to connect cables.

Connecting Audio/Video Signals

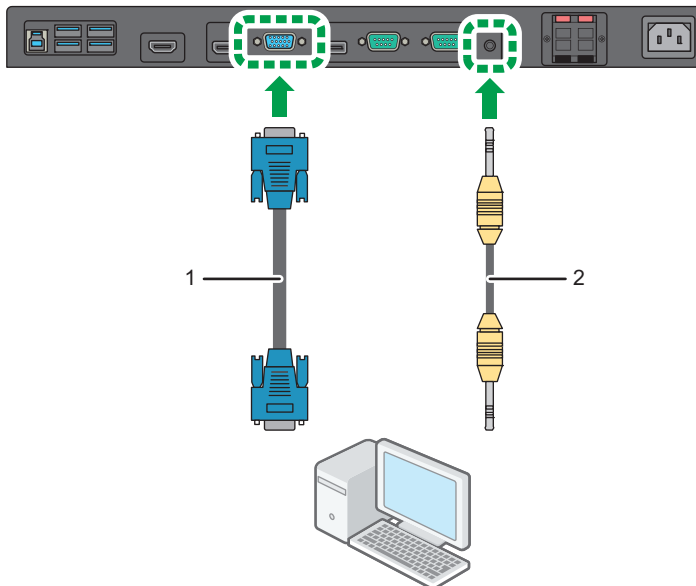
Pay attention to the following notes when you connect cables:

- Please turn off all devices.
- Familiarize yourself with the audio/video ports on the machine and the devices you want to use. Be aware that incorrect connections may adversely affect picture quality or result in the picture not being displayed.
- Do not remove cables from the ports by pulling the cable itself. Always grasp and pull the connectors at the end of the cable.
- Ensure that all cables are fully inserted and firmly seated.

2

Connecting the VGA Input

1. Connect the VGA Input jack on the display to the VGA output jack on a computer using a D-Sub (15-pin) cable.
2. Connect the computer's audio output jack to the Audio Input (VGA) jack on the machine using a suitable audio cable.



EAL011

1. D-Sub (15-pin) cable

2. Audio cable

3. Press the [VGA] button on the remote control.

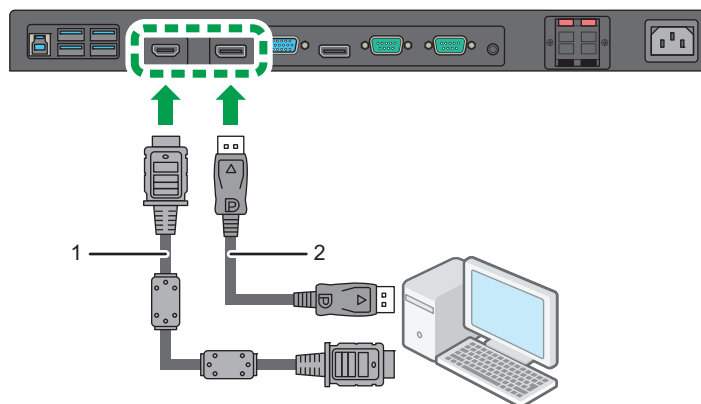
To select an appropriate audio source, see page 27 "Sound Menu" for details.

↓ Note

- The audio cable is not supplied and should be purchased separately.

Connecting the Digital Inputs

1. Use the supplied HDMI cable to connect the HDMI output jack of a computer or A/V device (such as a VCR or DVD player) to the HDMI Input jack on the machine. If the device has a DisplayPort output jack, connect it to the DisplayPort Input jack on the machine using a DisplayPort cable.



EAL012

1. Supplied HDMI cable

2. DisplayPort cable

2. Press the [HDMI] or [DP] button on the remote control.

To select an appropriate audio source, see page 27 "Sound Menu" for details.

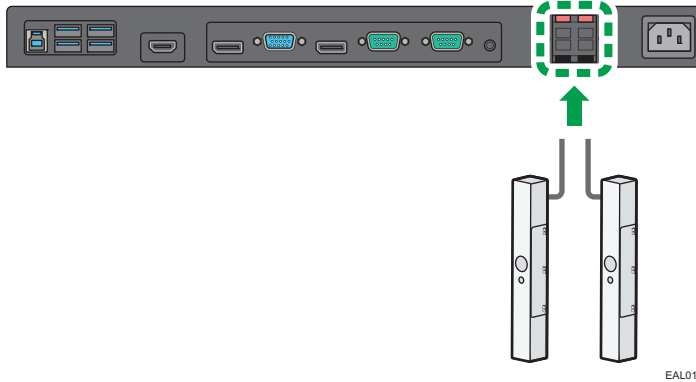
↓ Note

- The DisplayPort cable is not supplied and should be purchased separately.

Connecting External Speakers

The built-in amplifier on the machine allows you to output audio signals through external speakers.

1. Connect external speakers to the Speaker R (8Ω) 12W/Speaker L (8Ω) 12W jacks on the machine.

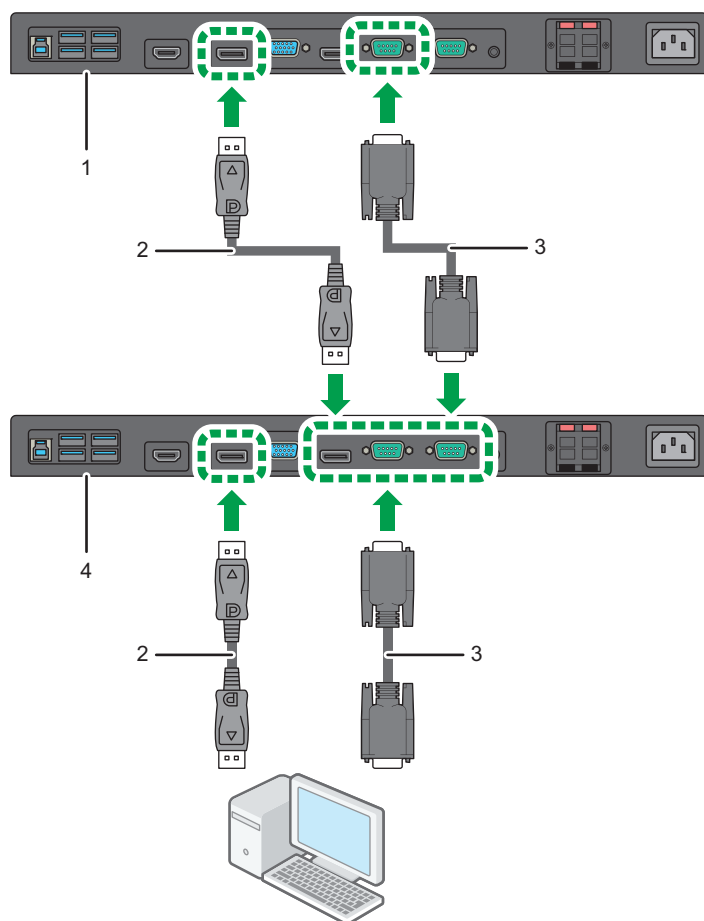


↓ Note

- When connecting external speakers, use speakers that support 8Ω output.
- You can use the remote control or the control panel on the machine to adjust the volume.
- When using external speakers, set Speaker in the Sound menu to [External].

Connecting Multiple Displays

You can connect multiple displays serially (daisy chain) to a computer for management. The number of displays you can connect serially depends on the resolution of the input signal you use.



EAL014

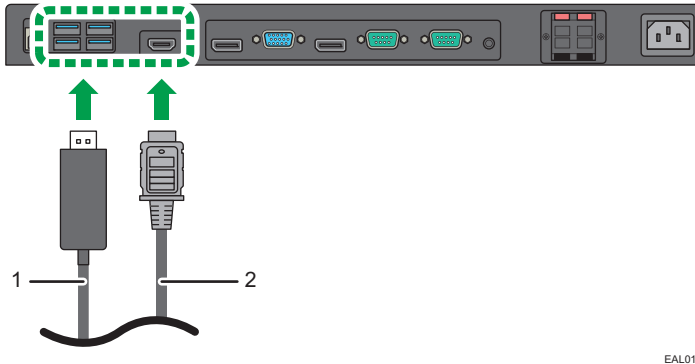
1. Additional display
2. DisplayPort cable
3. RS-232C cable
4. The first display

↓ Note

- The RS-232C cable and DisplayPort cable are not supplied and should be purchased separately.
- This RS-232C daisy chain application requires an RS-232C port equipped computer.
- Use RS-232C serial cross cables for daisy chain application.
- The video signals input to the DisplayPort Input jack of the additional display are output from the DisplayPort Output jack of the first display.

Connecting with a USB Cable

Connect the machine and an external device with a USB cable to supply power to the device.



1. USB cable
2. External device

Note

- For details about the name and description of each USB port, see “Input/Output Terminals”, Read This First.

3. Using the Touch Screen

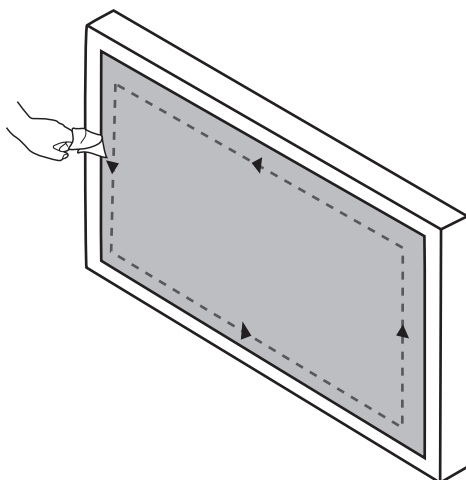
When the USB Type-B For Touch jack of the machine is connected to the USB port of a computer using the supplied USB cable, you can operate the Windows PC or Mac, just as you would with a mouse, using touch operations with your finger.

For supported operating systems, see page 37 "Specifications".

Important Instructions for Using the Touch Screen

3

- To use touch operation, use the supplied USB cable to connect the USB Type-B For Touch jack on the rear of the machine to the USB port of the computer.
- Depending on the operating system, multi-point touch operations may also be supported in addition to single-point touch operations.
- For details on multi-point touch operations, see the Windows PC's operating manual and other similar documents.
- Touch operation behavior may differ depending on the application. See the application's operating manual.
- When a controller that supports the OPS (Open Pluggable Specification) standard is connected to the machine, the control method for the touchscreen function changes according to what is selected in Touch Control Setting on the Setting menu. For details, see page 33 "Setting Menu".
- When the machine and another monitor are connected to the Windows PC at the same time, the touch entry signals may become mixed up. (For example, the cursor on the other monitor may move when the touch screen of the machine is touched.)
 - With the machine connected to the Windows PC, set up "Tablet PC Settings" for Windows.
- Keep the touch screen out of direct sunlight or spotlights.
- If the touch screen shows signs of malfunction, clean it.
 - Before you clean the screen, make sure the machine is turned off, and unplug the power cord.
 - Remove dust and dirt on the screen periodically. Use a clean and soft cloth for cleaning.



- To avoid damage to the screen, never use any type of abrasive materials to wipe the screen.
- Do not spray a detergent on the screen surface or the body directly. It may result in a short circuit to the touch screen.

4. The On-Screen Display Menu

This chapter explains how to use the On-Screen Display menu and describes the menu items on it.

The On-Screen Display Menu Overview

Menu name	Options/functions	Reference
Picture	• Picture Mode • Backlight • Contrast • Brightness • Saturation • Sharpness • Color Temp. • Reset	See page 25 "Picture Menu".
Sound	• Sound Mode • Treble • Bass • Balance • Volume • Mute • Speaker • Audio Source • Reset	See page 27 "Sound Menu".
Screen	• PAP Setting • Aspect • Adjust Screen • Touch Feature	See page 29 "Screen Menu".

Menu name	Options/functions	Reference
Setting	• Language • Power Save • Control Setting • Touch Control Setting • Set Monitor ID • OSD Rotation • Advanced • Information • All Reset	See page 33 "Setting Menu".

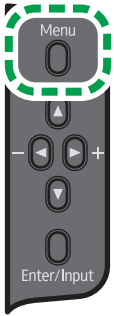
 Note

- Some options are only available when a certain input signal source is selected.

Operations in the On-Screen Display Menu

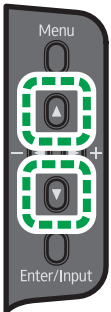
Using the Control Panel Buttons

1. Press [Menu] to open the On-Screen Display menu.



EAL016

2. Press [▲] or [▼] to select an item.



EAL017

3. Press [Enter/Input] to confirm selections.



EAL018

4. Press [▲] or [▼] to select a feature and press [◀] or [▶] to adjust settings.



EAL019

5. Press [Enter/Input] to save changes.



EAL018

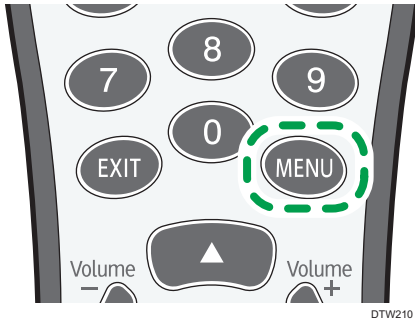
6. Press [Menu] to return to the previous item. Press [Menu] several times to return to the On-Screen Display menu, and press [Menu] again to close the On-Screen Display menu.



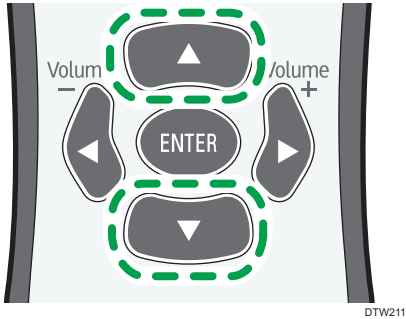
EAL016

Using the Remote Control

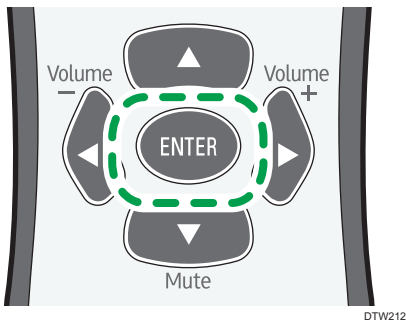
1. Press [MENU] to open the On-Screen Display menu.



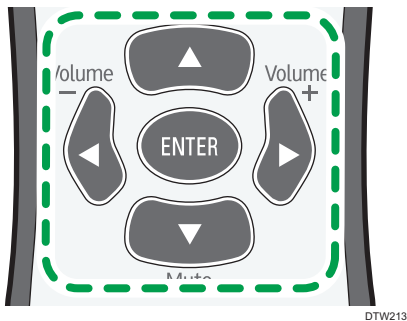
2. Press [▲] or [▼] to select an item.



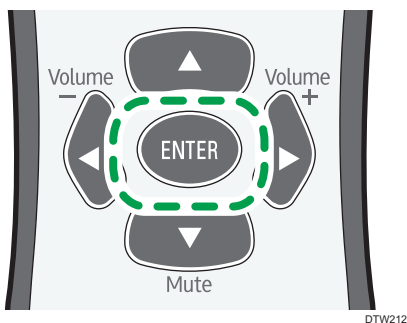
3. Press [ENTER] to confirm selections.



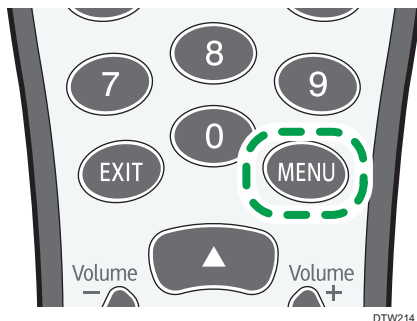
4. Press [▲] or [▼] to select a feature and press [◀] or [▶] to adjust settings.



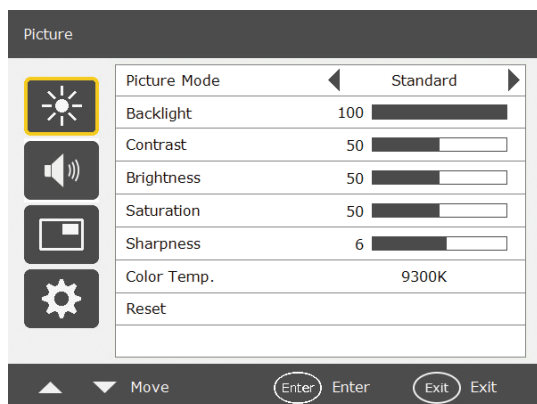
5. Press [ENTER] to save changes.



6. Press [MENU] to close the On-Screen Display menu.



Picture Menu



4

Picture Mode

Sets the display mode.

- **Standard**

This is the standard setting.

- **Vivid**

Displays the image so it is brighter and more vivid.

- **Low Blue Light**

Reduces the amount of blue light, which is harmful to the eyes.

- **User Setting**

Sets a combination of Picture Modes.

Backlight

Adjusts the backlight intensity for the screen.

This feature is not available if the Adaptive Contrast function is set to [On].

Contrast

Adjusts the image contrast.

Brightness

Adjusts the image brightness.

Saturation

Adjusts the color intensity of the image.

Sharpness

Adjusts the image sharpness.

Color Temp.

Adjusts the color temperature.

- 9300K

Displays images in a bluish tone.

- 8000K

Displays images in a natural tone.

- 6500K

Displays images in a reddish tone.

- 5000K

Adjusts the tone to reduce the amount of blue light, which is harmful to the eyes.

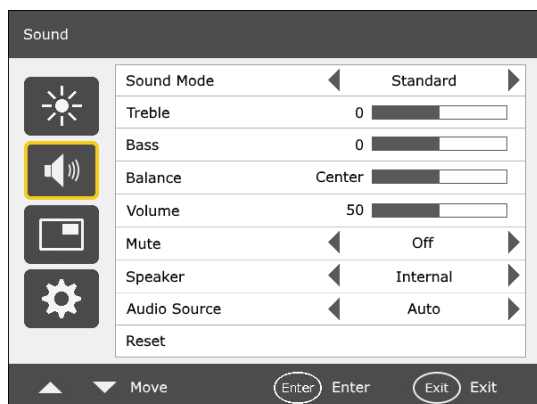
- User

The RGB values can each be adjusted.

Reset

Resets all settings in the Picture menu.

Sound Menu



4

Sound Mode

Adjusts the sound output from the speakers.

- Dynamic: Enhances treble and bass.
- Standard: Flat settings.
- Custom: Enables editing of the Treble and Bass settings.

Treble

Adjusts the audio treble.

Bass

Adjusts the audio bass.

Balance

Adjusts the audio balance.

Volume

Turns down/up the volume.

Mute

Turns on or off the mute function.

Speaker

Sets the audio source.

- Internal: Selects the audio output source from the internal speakers.
- External: Selects the audio output source from the external speakers.

Audio Source

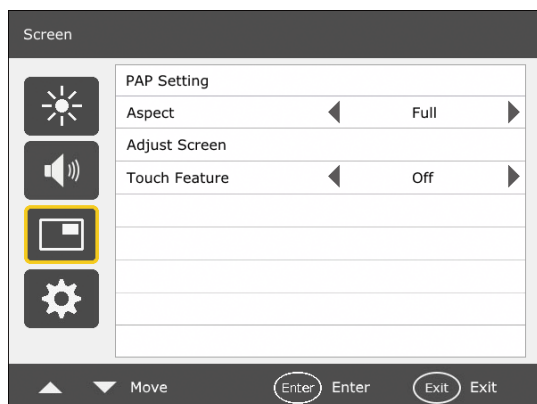
Select either the audio from the source of the image currently displayed or the audio from Audio Input.

[Computer In] is only available if the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display.

Reset

Resets all settings in the Sound menu.

Screen Menu



4

PAP Setting (Picture and Picture)

PAP

Turns on or off the PIP (Picture in Picture) and PBP (Picture by Picture) functions.

If the Touch Feature function is set to [On], PBP will be disabled.

PAP Sub source

- In PIP mode, selects the image source for the sub picture.
- In PBP mode, selects the image source for the right picture by default.

Swap

- In PIP mode, swaps the main and sub pictures.
- In PBP mode, swaps the left and right pictures.

Picture Size

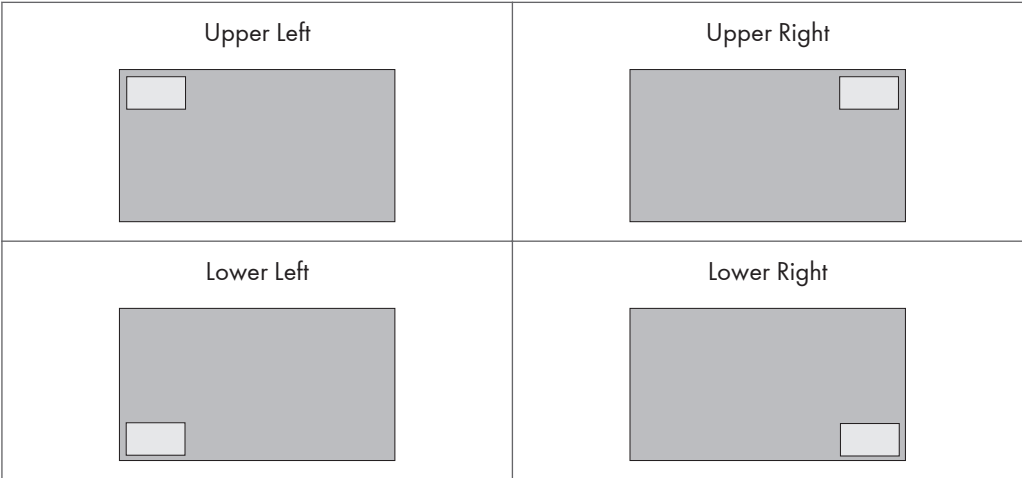
Changes the size of the sub picture. (Unit: pixel)

	PIP mode Aspect Ratio (16:9)	
	Width	Height
Small	480	270
Large	864	486

- In PIP mode, the aspect ratio of the sub picture is fixed as 16:9.
- In PBP mode, the size of the sub picture cannot be changed.

Picture Position

Only in PIP mode, changes the position of the sub picture.



See page 44 "List of PAP Input Signal Combination Supported by the Machine" for more information on supported combinations.

When a controller designed compliant with OPS (Open Pluggable Specification) standard is connected to the machine, the PBP mode will be disabled.

Aspect

Sets the picture's aspect ratio.

Normal

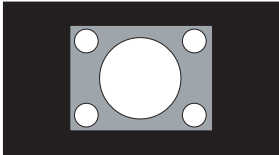
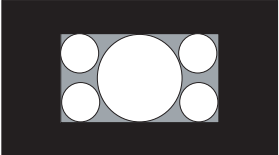
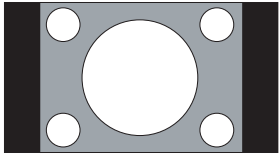
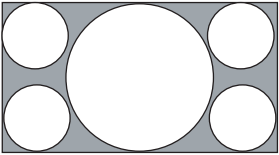
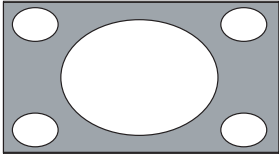
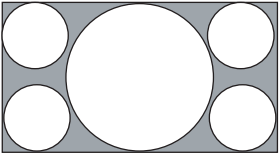
Enlarges the picture to fill the screen in the vertical direction, keeping the same aspect ratio. A black frame may appear around the picture.

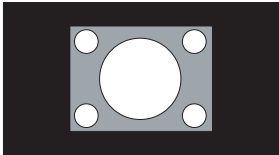
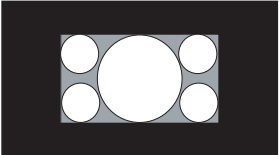
Full

- Enlarges the picture horizontally to fill the screen when the picture source is 4:3 (Standard definition).
- When the picture source is 16:9 (High definition), it displays in the same 16:9 aspect ratio.

Real

Displays the picture in its original number of dots.

For video signal inputs	
4:3 original source	16:9 original source
	
Normal 	Normal 
Full 	Full 

For PC signal input	
Real 	Full 

Adjust Screen

Auto Adjustment

Automatically optimizes image display for the VGA input.

Phase

Adjusts the phase of the VGA input image.

Clock Frequency

Adjusts the clock frequency of the VGA input image.

H. Position

Adjusts the horizontal position of the VGA input image.

V. Position

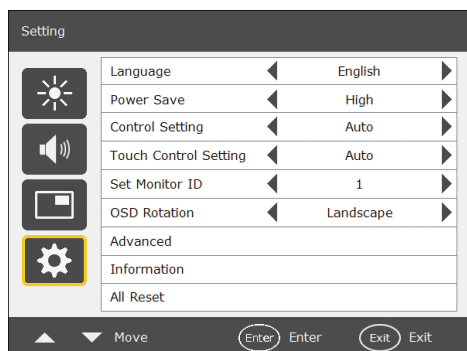
Adjusts the vertical position of the VGA input image.

Touch Feature

When turned [On], Aspect, PBP, and Overscan will be disabled to optimize touch performance.

When the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display, Touch Feature is fixed to [On].

Setting Menu



4

Language

Sets your preferred language for the On-Screen Display menu.

Power Save

The machine can be set to enter power saving mode when no signal is detected.

The following settings are available for power saving mode:

- High
The power consumption is reduced to the lowest level. The signal from the external input can wake the display up only when VGA is selected as the video input source.
- Low
The signal from the external input can wake the display up for all video input sources.
- Off
The backlight remains on at all times.

Note

- We recommend setting "Power Save" to [High] when Ricoh Interactive Whiteboard Controller OP-10/OP-5 is connected to the machine.
- When the RS-232C Input terminal is used, set "Power Save" to [Low] on the machine and then set Ricoh Interactive Whiteboard Controller OP-10/OP-5 so that it does not enter sleep mode.

Control Setting

Auto

- If the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display, sets the OPS controller to control the machine.
- If not, sets RS-232C terminal to control the machine.

RS-232C

Sets RS-232C terminal to control the machine.

Computer In

Sets the OPS (Open Pluggable Specification) controller to control the machine.

[Computer In] is only available if the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display.

For details about signals controlled by the RS-232C port, see page 45 "List of the Functions and Commands Controlled by the RS-232C Terminal".

Touch Control Setting

When a controller that supports the OPS standard is connected to the machine, the way to control the Touch Control Setting function changes according to what is selected in this menu.

Auto

- When the computer is not connected to the USB Type-B For Touch jack
The touchscreen function is controlled by the signal from the OPS controller.
- When the computer is connected to the USB Type-B For Touch jack
 - When [Computer In] is selected as the input source, the touchscreen function is controlled by the signal from the OPS controller. "Computer In" means the input from the OPS controller.
 - When the external input (VGA, HDMI, or DisplayPort) is selected as the video input source, the touchscreen function is controlled by the signal from the computer connected to the applicable port.

USB

The touchscreen function is controlled by the signal from the computer connected to the USB Type-B For Touch jack for touchscreen control.

Computer In

The touchscreen function is controlled by the signal from the OPS controller.

You can use this item only when the connected controller supports the OPS standard.

When [Auto] is set and the video input source is switched, the device connected to the USB hub of the machine may not be recognized. In that case, connect the USB device again, pair the Bluetooth devices again, or turn the machine on and off.

Set Monitor ID

Assigns an ID number for the current machine when multiple displays are connected.

For use when the machine is controlled by the signal from the RS-232C Input terminal.

OSD Rotation

To install the main unit vertically, you will need to change the orientation of the display screen.

Switching the display orientation to [Portrait] turns the screen 90 degrees for vertical display.

Advanced

Auto Search

- If turned [On], the display automatically detects available input sources.
- When the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display, Auto Search is fixed to [Off].

Auto Adjustment

Sets whether to optimize image display for each VGA input.

Overscan

Changes the display area of the image. When this function is enabled, 96% of the original size of the image will be displayed, and the rest of the areas surrounding the image will be cut off.

This can be set when HDMI or DisplayPort is selected as the input source.

- On
Enables the Overscan function for Video timing.
- Off
Disables the Overscan function.

The Overscan function will become unavailable (grayed out) when:

- The Touch Feature function in the Screen menu is turned [On]
- The PAP function in the Screen menu is turned [On].

OSD Info Box

- On

When switching signal inputs or changing timing, the current input source and resolution are displayed on-screen.

- Off

The information box is displayed on-screen only when you press [INFO] on the remote control.

Adaptive Contrast

Turns the Adaptive Contrast function on or off. This feature enhances image contrast for dark scenes.

DisplayPort

- 1.1

Select this setting when connecting a DisplayPort standard version 1.1 device to the DisplayPort Input jack.

- 1.2

Select this setting when connecting a DisplayPort standard version 1.2 device to the DisplayPort Input jack.

Touch Screen Control

This setting cannot be changed.

LED Indicator

You can use this setting to turn the power indicator off, for example, when using the machine as digital signage. If this setting is set to [Off], the power indicator will remain off even if the machine is turned on.

Information

Displays the following information of your machine:

- Model Name
- Operation Time
- Software Version

All Reset

Returns all settings to factory default values.

5. Product Information

This chapter explains the machine specifications and input and output signals the machine supports.

Specifications

Item		Specifications
LCD panel	Backlight	LED
	Panel size	32"
	Pixel pitch (mm)	0.3637 × 0.3637
	Native resolution (pixels)	1920 × 1080
	Effective display area (H × V)	698.4 × 392.85 mm (27.5 × 15.5 inches)
	Display type	IPS
	Brightness (cd/m ²) (typical)	500 ⬇️ Note Brightness changes in accordance with the image settings. In addition, the brightness fades as the product ages. It does not maintain a consistent level of brightness.
	Contrast (typical)	3000:1
	Aspect ratio	16:9
	Response time (typical)	8 (ms) (Gray to Gray)
	View angles	178° in the horizontal field; 178° in the vertical field (Contrast ratio = 10 or more)
	Panel bit	8-bit

Item		Specifications
Touch	Technology	PCAP
	Resolution	1920 × 1080
	Maximum number of touches* ¹	10
	Touch output	USB 3.0
	Supported operating systems	Multi-point touch: Windows 7 (Home Premium/Ultimate/Professional) Windows 8, Windows 8 Pro, Windows 8 Enterprise Windows 8.1, Windows 8.1 Pro, Windows 8.1 Enterprise Windows Embedded Standard 7 Windows Embedded Standard 8 Windows 10 (Home/Pro/Enterprise/IoT) Single-point touch: Windows 7 (Home Basic/Home Premium/Ultimate/Professional) Windows 8, Windows 8 Pro, Windows 8 Enterprise Windows 8.1, Windows 8.1 Pro, Windows 8.1 Enterprise Windows Embedded Standard 7 Windows Embedded Standard 8 Windows 10 (Home/Pro/Enterprise/IoT) Mac OS
Panel glass	Type	AG anti-glare glass
	Thickness	Approximately 2 mm

Item		Specifications
Input	Computer	VGA (D-Sub 15-pin)
	Video	HDMI, DisplayPort
	Audio	Audio Input (3.5 mm jack)
	Control	RS-232C (D-Sub 9-pin)
	USB	• USB 3.0 Type-A × 4 • USB 3.0 Type-B × 1 (exclusively for the touch panel^{*2})
Output	Computer	DisplayPort
	Audio	Speaker L/R
	Control	RS-232C (D-Sub 9-pin)
Audio	Audio W (Amp)	12 W × 2
	Internal speaker	8 W (8Ω) × 2
Power	Supply	• North America 120V AC, 60 Hz • Europe 220-240V AC, 50 Hz • Asia 220-240V AC, 50/60 Hz
	Consumption (While operating)	215 W
	Consumption (Standby)	Less than 0.3 W

Item		Specifications
Environment	Operating temperature	0 - 32°C (32 - 89.6°F) Note The temperature range varies according to the conditions of the installation location.
	Operating humidity	10 - 80% (without condensation) Note - The humidity range varies according to the conditions of the installation location. - A low humidity (60% or less) is recommended when the product is installed in a high temperature environment.
	Altitude	Maximum: 2500 m (8200 feet)
Mechanical	Weight (excludes full options)	15 kg
	Dimensions (W × H × D)	- When installed horizontally: 719.2 × 413.7 × 24.8 mm - When installed vertically: 413.7 × 719.2 × 24.8 mm
Feature	RS232 control daisy chain	
	ID setting	
	Sharpness enhancement	
	Dimming control (Adaptive Contrast)	
	Blue light reduction function	
	Picture in Picture (PIP)	
	Picture by Picture (PBP)	
	8-bit color processing	
	Operation Time	

- *1 10 touch points are supported at most. However, depending on where you touch, operations can be unstable.
- *2 When a controller that supports the OPS (Open Pluggable Specification) standard is connected to the machine, the control method for the touchscreen function changes according to what is selected in Touch Control Setting on the Setting menu. For details, see page 33 "Setting Menu".

Note

- Specifications and functions are subject to change without notice.

List of Video Input Signals Supported by the Machine

Resolution	Input source		
	VGA	DisplayPort	HDMI
640 × 480 @ 60Hz (VGA)	Supported	Supported	Supported
640 × 480 @ 72Hz	Supported	Supported	Supported
640 × 480 @ 75Hz	Supported	Supported	Supported
720 × 400 @ 70Hz	Supported	Supported	Supported
800 × 600 @ 60Hz (SVGA)	Supported	Supported	Supported
800 × 600 @ 75Hz	Supported	Supported	Supported
832 × 624 @ 75Hz	Supported	Supported	Supported
1024 × 768 @ 60Hz (XGA)	Supported	Supported	Supported
1024 × 768 @ 75Hz	Supported	Supported	Supported
1152 × 870 @ 75Hz	Supported	Supported	Supported
1280 × 800 @ 60Hz	Supported	Supported	Supported
1280 × 720 @ 60Hz	Supported	Supported	Supported
1280 × 1024 @ 60Hz (SXGA)	Supported	Supported	Supported
1280 × 1024 @ 75Hz	Supported	Supported	Supported
1600 × 900 @ 60Hz	Supported	Supported	Supported
1680 × 1050 @ 60Hz (WSXGA)	Supported	Supported	Supported
1680 × 1050 @ 60Hz RB (WSXGA)	Supported	Supported	Supported
1920 × 1080 @ 60Hz (FHD)	Supported	Supported	Supported
720 × 480i (60Hz)	Not supported	Not supported	Not supported
720 × 576i (50Hz)	Not supported	Not supported	Not supported
720 × 480p (60Hz)	Not supported	Supported	Supported

Resolution	Input source		
	VGA	DisplayPort	HDMI
720 × 576p (50Hz)	Not supported	Supported	Supported
1280 × 720p (25Hz)	Not supported	Not supported	Not supported
1280 × 720p (30Hz)	Not supported	Not supported	Not supported
1280 × 720p (50Hz)	Not supported	Supported	Supported
1280 × 720p (60Hz)	Not supported	Supported	Supported
1920 × 1080i (50Hz)	Not supported	Not supported	Not supported
1920 × 1080i (60Hz)	Not supported	Not supported	Not supported
1920 × 1080p (24Hz)	Not supported	Supported	Supported
1920 × 1080p (25Hz)	Not supported	Supported	Supported
1920 × 1080p (30Hz)	Not supported	Supported	Supported
1920 × 1080p (50Hz)	Not supported	Supported	Supported
1920 × 1080p (60Hz)	Not supported	Supported	Supported
1920 × 1080p (24Psf)	Not supported	Not supported	Not supported
1920 × 1080p (25Psf)	Not supported	Not supported	Not supported

List of PAP Input Signal Combination Supported by the Machine

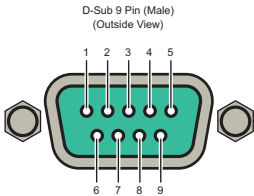
		Main/Left picture signal source			
		VGA	HDMI	DisplayPort	Computer In *1
Sub/Right picture signal source	VGA	Supported	Supported	Supported	Supported
	HDMI	Supported	Supported	Supported	Supported
	DisplayPort	Supported	Supported	Supported	Supported
	Computer In *1	Supported	Supported	Supported	Supported

*1 The Computer In is only available if the controller designed compliant with OPS (Open Pluggable Specification) standard is connected to this display.

List of the Functions and Commands Controlled by the RS-232C Terminal

When you connect the machine and a computer with the communication cable RS-232C (crossover cable), you can control the machine from the computer via the RS-232C terminal using a terminal emulation program.

1 Pin Grid Array and Names of Signals



Pin No.	Signal	Remark
1	NC	
2	RXD	Input to the machine (LCD monitor)
3	TXD	Output from the machine (LCD monitor)
4	GND	
5	NC	
6	GND	
7	NC	
8	NC	
9	NC	
frame	GND	

* Using a null modem cable (crossover cable) is required to use the machine with a computer.

2 Communication Settings

Baud rate	115200 bps
Data bits	8 bits
Parity	None
Stop bits	1 bit

3 Communication Specifications

You can control the machine from a computer using the following format command. Control methods contain two commands, which are set command and get command. Set command is used to control the settings of the machine. Get command is used to obtain the setting information of the machine. For details about commands, see "Set and Get Commands Table" below.

If you connect multiple displays to a computer, specify the monitor ID for each display in the Setting menu of the On-Screen Display menu.

3-1 Command Format

Byte1	0	1	2	3	4	5	6	7	8
Name	Length	Monitor ID		Command Type	Command Code	Value			CR
						Byte1	Byte2	Byte3	

3-2 Set Command Example

Input example: Set the brightness value to 76 for the display whose monitor ID is 02.

Byte1	0	1	2	3	4	5	6	7	8
Name	Length	Monitor ID		Command Type	Command Code	Value			CR
Hex	0x38	0x30	0x32	0x73	0x24	0x30	0x37	0x36	

Return example:

Byte1	0	1	2	3	4
Name	Length	Monitor ID		Command Type	Command Code
Hex	0x34	0x30	0x32	0x2B	0x0D

3-3 Get Command Example

Input example: Obtain the brightness value of the display whose monitor ID is 05.

Byte1	0	1	2	3	4	5	6	7	8
Name	Length	Monitor ID		Command Type	Command Code	Value			CR
Hex	0x38	0x30	0x35	0x67	0x62	0x30	0x30	0x30	

Return example: The returned brightness value is 67.

Byte1	0	1	2	3	4	5	6	7	8
Name	Length	Monitor ID		Command Type	Command Code	Value			CR
Hex	0x38	0x30	0x35	0x72	0x62	0x30	0x36	0x37	

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Set and Get Commands Table

Set and Get Commands Table

In the table below, hyphens "-" indicate items that are not supported.

Function	Length	Set Command		Get Command		Value Range (ASCII Bytes)	Remark
		Command Type	Command Code (Hex)	Command Type	Command Code (Hex)		
Power	8	73	21	-	-	000: Standby	
Video Source	8	73	22	67	6A	000: VGA	If the PIP (Picture in Picture) or PBP (Picture by Picture) function is enabled, the returned value is the source at the active window.
						001: HDMI	
						002: Computer In	This is valid if the OPS (Open Pluggable Specification) controller is connected to the machine.
						007: DisplayPort	
Picture Menu							
Picture Mode	8	73	81	67	B1	000: Standard	
						001: Vivid	
						003: User Setting	
						004: Low Blue Light	
Backlight	8	73	84	67	B4	000-100	
Contrast	8	73	23	67	61	000-100	
Brightness	8	73	24	67	62	000-100	
Saturation	8	73	82	67	B2	000-100	
Sharpness	8	73	25	67	63	000-010	
Color Temp.	8	73	88	67	B6	000: 9300K	
						001: 8000K	
						002: 6500K	
						003: User	
						004: 5000K	
Picture Reset	8	73	26	-	-		Whatever value can be specified.
Sound Menu							
Sound Mode	8	73	33	67	65	000: Dynamic	
						001: Standard	
						002: Custom	
Treble	8	73	37	67	37	000-010	OSD value = RS232 value-5
Bass	8	73	38	67	38	000-010	OSD value = RS232 value-5
Balance	8	73	39	67	39	000-066	OSD value = RS232 value-33
Volume	8	73	35	67	66	000-100	
Mute	8	73	36	67	67	000: Off	
						001: On	
Speaker	8	73	89	67	B9	000: Internal	
						001: External	
Audio Source	8	73	88	67	88	000: Audio In	
						002: HDMI	
						001: Computer In	This is valid if the OPS (Open Pluggable Specification) controller is connected to the machine.
						004: DisplayPort	
						100: Auto	
Sound Reset	8	73	3B	-	-		Whatever value can be specified.
Screen Menu							
PAP Enable	8	73	8A	67	BA	000: Off	
						001: PIP	
						002: PBP	
PAP Sub source	8	73	8B	67	BB	000: VGA	
						001: HDMI	
						001: Computer In	This is valid if the OPS (Open Pluggable Specification) controller is connected to the machine.
						007: DisplayPort	
PAP Swap	8	73	8C	-	-		Swap main and sub sources. Whatever value can be specified.
PAP Size	10	73	8D	67	BD	00000: Small	When PAP = PIP
						10000: Large	

Function	Length	Set Command		Get Command		Value Range (ASCII Bytes)	Remark
		Command Type	Command Code (Hex)	Command Type	Command Code (Hex)		
PIP Position	10	73	8E	67	BF	0000: Upper Left	
						1000: Upper Right	
						2000: Lower Left	
						3000: Lower Right	
Aspect Ratio	8	73	31	67	77	000: Normal Mode	
						001: Real mode	
						002: Full mode	
Auto Adjustment Execute	8	73	8F	-	-		For VGA only
VGA Phase	8	73	91	67	C1	000-063	
VGA Clock frequency	8	73	90	67	C0	000-100	
VGA H.Position	8	73	92	67	C2	000-100	Depends on the timing, 100 cannot be reached.
VGA V.Position	8	73	93	67	C3	000-100	Depends on the timing, 100 cannot be reached.
Touch Feature	8	73	9E	67	9E	000: Off	
						001: On	
Setting Menu							
Language	8	73	32	67	78	000: English	
						001: Français	
						002: Español	
						003: 繁体	
						004: 简体	
						005: Português	
						006: German	
						007: Dutch	
						008: Polish	
						009: Russia	
						010: Czech	
						011: Danish	
						012: Swedish	
						013: Italian	
						014: Romanian	
						015: Norwegian	
						016: Finnish	
						017: Greek	
						018: Turkish	
						020: Japanse	
Power Save	8	73	A9	67	D9	000: Off	
						001: Low	
						002: High	
Touch Control Setting	8	73	EB	67	EB	000: Auto	This is valid if the OPS (Open Pluggable Specification) controller is connected to the machine.
						001: Computer In	
						002: USB	
Monitor ID	8	73	3D	67	75	001-098	
OSD Rotation	8	73	9F	67	CF	000: Landscape	
						001: Portrait	
Auto Search	8	73	96	67	C6	000: Off	
						001: On	
Auto Adjustment	8	73	AA	67	DA	000: Off	
						001: On	
Over Scan	8	73	97	67	C7	000: Off	
						001: On	
OSD Info Box	8	73	5B	67	5D	000: Off	
						001: On	
Adaptive Contrast	8	73	85	67	B5	000: Off	
						001: On	
DisplayPort	8	73	EA	67	EA	000: 1.1	
						000: 1.2	
LED Indicator	8	73	AE	67	AE	000: Off	
						000: Auto	
Operation Time	10	-	-	67	76	00000-99999	Units are hours.
All Reset	8	73	7E	-	-	000: VGA	Whatever value can be specified.

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Output Signals

The DisplayPort Output jack of the machine outputs the signals from the DisplayPort Input jack as they are. You can connect devices, and view the video or image displayed on the machine on the connected device.

Note

- Depending on the connected device, the video or image may not be displayed on the device connected to the output terminal even if it is displayed on the machine's display.

6. Troubleshooting

This chapter explains possible problems and solutions when the functions of this machine cannot be properly used.

Troubleshooting

Problem	Solution
No picture	Check the following: • Is the machine turned on? Check the power indicator of the display. • Is the signal source device turned on? Turn on the device and try again. • Are there any loose cable connections? Make sure that all cables are connected firmly. • Have you chosen an unsupported output resolution on the computer? Refer to page 42 "List of Video Input Signals Supported by the Machine" to select a supported resolution and try again. • Have you chosen an unsupported output resolution on the DVD or Blu-ray disc player? Refer to page 42 "List of Video Input Signals Supported by the Machine" to select a supported resolution and try again.
Only a monochrome image is displayed.	• Reconnect the cable. • Check that the correct cable is used.
• The display is too dark. • The display is too bright.	Press the [Menu] button on the control panel and adjust the brightness. For details about how to adjust the brightness, see page 25 "Picture Menu".
Part of the screen is constantly lit or unlit	The LCD panel consists of individual pixels to display images and is manufactured according to the design specifications. While most of the screen works normally, part of the screen may remain unlit or constantly lit (in red, blue, or green). This is a technical limitation of the LCD technology and is not a defect.
Screen magnification changes	If you pull out the video cable and then quickly insert it again, the screen magnification may change. Do not pull out the video cable and then quickly insert it again.

Problem	Solution
No sound	Check the following: • Have you turned on the mute function on the machine or the input source device? Turn off the mute function or increase the audio volume level and try again. • Are there any loose cable connections? Make sure that all cables are connected firmly. • Check that the correct audio source is selected. For details about how to select an input source, see page 27 "Sound Menu".
The computer input image looks strange	Check the following: • Have you chosen an unsupported output resolution on the computer? Refer to page 42 "List of Video Input Signals Supported by the Machine" to select a supported resolution and try again. • Use the Auto Adjustment function to let the display automatically optimize the computer image. For details about the Auto Adjustment function, see page 29 "Screen Menu". • If the result of the Auto Adjustment function is not satisfactory, use the Phase, Clock Frequency, H. Position and V. Position functions to manually adjust the image. • Reconnect the cable, and then check that the cable is connected correctly. • Save the changes to the file you are working on, and then quickly press and release the power button of the display. When the machine shuts down, press the power button again to restart the machine. If any of these actions do not fix the problem, contact your service representative.
The control panel buttons do not work	When a controller designed compliant with OPS (Open Pluggable Specification) standard is connected to the machine, the control panel buttons will not work until the controller is completely shut down. Wait until shutdown is complete.

Problem	Solution
The remote control does not work	• Check for incorrect battery orientation. • Check for dead batteries. • Check your distance and angle from the machine. • Check whether remote control is properly being pointed at the remote control sensor window of the display. • Check for any obstacle between the remote control and the remote control sensor window. • Check that the remote control sensor window is not under strong fluorescent lighting, or in direct sunlight. • Check for any devices (computer or personal digital assistant, PDA) nearby that transmit infrared signals which may cause interference to signal transmission between the remote control and the machine. Turn off the infrared function of these devices.
An abnormal sound is heard from the area surrounding the input/output terminals on the back of the display	Quickly press and release the power button of the display. When the machine shuts down, press the power button again to restart the machine. If any of these actions do not fix the problem, contact your service representative.

7. Appendix

This chapter describes the trademarks.

Trademarks

DisplayPort is registered trademarks of Video Electronics Standards Association in the U.S. and/or other jurisdictions.

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- The product names of Windows 8 are as follows:

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Microsoft® Windows® 8 Pro

Microsoft® Windows® 8 Enterprise

- The product names of Windows 8.1 are as follows:

Microsoft® Windows® 8.1

Microsoft® Windows® 8.1 Pro

Microsoft® Windows® 8.1 Enterprise

- The product names of Windows 10 are as follows:

Microsoft® Windows® 10 Home

Microsoft® Windows® 10 Pro

Microsoft® Windows® 10 Enterprise

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