

DATA PROJECTOR

XJ-V1/XJ-V2

User's Guide

- Be sure to read the "Safety Precautions" and "Operating Precautions" in the "Setup Guide" document, and make sure you use this product correctly.
- Keep this manual in a safe place for future reference.
- Visit the site below for the latest version of this manual and the "Setup Guide".
<http://world.casio.com/manual/projector/>

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Useful Features and Functions

- **Mercury-free Hybrid Light Source**

A CASIO-original laser and LED hybrid light source delivers high luminance up to 2,700 lumens (XJ-V1)/3,000 lumens (XJ-V2). This projector does not use a mercury lamp, making it environmentally friendly.

- **No-wait Projection**

A CASIO hybrid light source reaches maximum brightness immediately after power is turned on, compared with a wait of approximately one minute normally required with a mercury lamp. The light source will even reach maximum brightness immediately if you turn it back on right after you turn it off. A mercury lamp requires a longer wait in this case to cool down.

- **Eco Mode**

You can select from among five levels that provide different combinations that balance power saving with projection brightness.

- **Support for Three Input Sources**

Analog RGB, component video (Y-Cb-Cr, Y-Pb-Pr), and HDMI input sources are supported.

- **Vertical Keystone Correction**

Manual adjustment to correct for vertical keystone (distortion of the projected image shape caused when projecting from below or above the projection surface) and return the projected image to a rectangular shape.

- **AUDIO OUT Terminal for Audio Output**

Audio input via the projector's HDMI terminal or AUDIO IN terminal is output from its AUDIO OUT terminal. Amped speakers or other equipment can be connected to the AUDIO OUT terminal when you want to output audio from another device via the projector.

- **Ceiling Mounted and Rear Projection Support**

The projector can be configured to project an image of normal orientation even when installed upside down (for ceiling projection) or when projecting from behind the screen.

- **Direct Power On**

The projector can be configured to turn on automatically and start projecting as soon as it is plugged into a power outlet.

- **Firmware update**

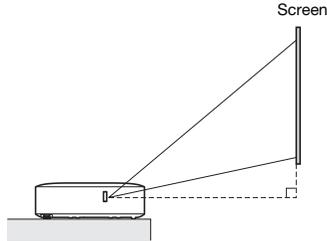
Firmware (software in the projector flash ROM) updates can be transferred to the projector from a computer as required.

Getting Ready

This section explains how to select a location for the projector, how to connect its cables, and how to perform other operations required before using it.

Setting Up the Projector

Locate the projector on a desk, table, or stand that is firm and level. Make sure that you allow sufficient space around the sides and back of the projector for proper ventilation. The illustrations below show how the projector should be oriented relative to the screen for optimum projection.



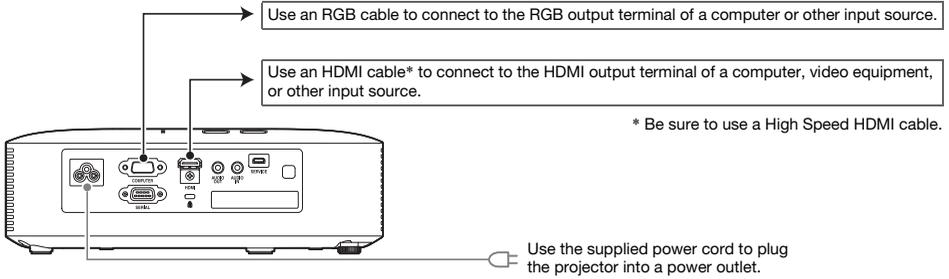
Make sure the projector is at a right angle to the screen.

Setup Precautions

- Use a conveniently located power outlet that you can reach easily when you need to unplug the projector.
- Do not locate any objects within 30 cm (11.8 inches) around the projector. Particular care is required to keep objects away from projector air intake and exhaust openings.
- Airflow from air conditioning equipment can blow the heat being exhausted from the area around the projector's lens in a way that causes heat ripples to appear in the projected image. If this happens, adjust the airflow of the air conditioning equipment or move the projector.

Connecting Projector Cables

Connect the projector to a power outlet and to an input source device.

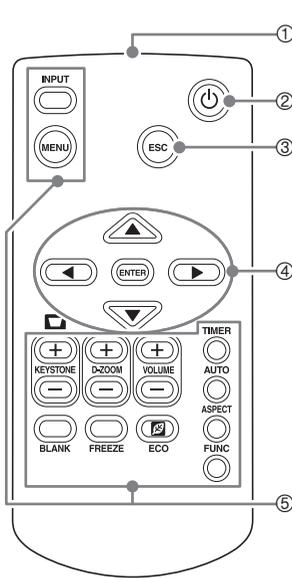


Note

- For more information about component video connection, see “Connecting to a Component Video Output” on page 32.
- For information about how to connect for RS-232C control of the projector, see “Projector RS-232C Control” (page 39).
- For information about how to connect in order to update the projector firmware, see “Updating Firmware” (page 33).

Remote Controller

Projector operations are performed using the remote controller that comes with it. Point the remote controller signal emitter at one of the signal receivers on the projector as you perform remote controller key operations. The maximum range of the remote controller signal is approximately 5 meters (16.4 feet) (between signal emitter and receiver).



- ① Remote control signal emitter
- ② [⏻] (Power) key
Turns power on or off.
- ③ [ESC] key
Press to exit the currently displayed menu or to cancel an operation.
- ④ Cursor keys (▲/▼/◀/▶), [ENTER] key
Use the cursor keys to move between menu items, and to change setting values. Press the [ENTER] key to select a menu item or to execute a function.
- ⑤ Each of these keys has a specific fixed function. For details, see the sections that describe key operations in “Operating the Projector” (pages 10 through 25). For information about the [MENU] key, for example, see “Using the Setup Menu (MENU)” (page 19).



Important!

- To avoid running down the battery, store the remote control unit so its keys are not pressed inadvertently.

To load remote controller batteries



Important!

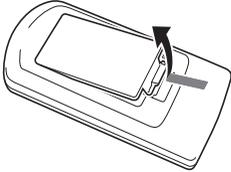
- Be sure to use alkaline batteries only.



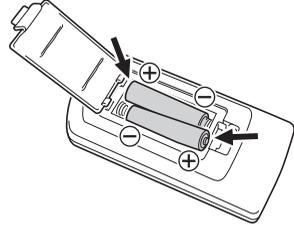
Caution

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

1. Open the battery cover on the back of the remote controller.



2. Load two new batteries into the case, making sure that their positive (+) and negative (-) ends are facing correctly.



3. Close the battery cover on the back of the remote controller.

To replace remote controller batteries

Open the battery cover on the back of the remote controller, replace the old batteries with new ones, and then close the battery cover.

Operating the Projector

This section explains how to use the remote controller to perform projector operations.

Selecting the Input Source (INPUT)

To select the input source

- 1. Press the [INPUT] key.**
- 2. On the “Input” dialog box that appears, use the [INPUT], [▲] and [▼] keys to select the input source you want and then press the [ENTER] key.**
 - If you do not press the [ENTER] key, the projector will automatically apply the currently selected input source after about two seconds.
 - The name of the input source you selected will appear in the upper right corner of the projection screen for a few seconds.
 - The message “No signal input” will appear if no input signal can be detected.

Resolution

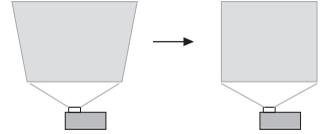
This projector’s video resolution is fixed at XGA (1024 × 768 pixels). Images may appear coarse, text and other figures may be difficult to read or a moire pattern may appear when the input signal from a computer does not match the projector’s video resolution. If this happens, change the computer’s output resolution setting so it matches the projector’s video resolution. See the user documentation that comes with your computer for details about changing its settings.

Output Image Operations

To use manual keystone correction (KEYSTONE)

The projector has a keystone correction feature that prevents distortion of the projected image when projecting from an angle.

You can use the [KEYSTONE +] and [KEYSTONE -] keys to adjust keystone correction manually.



To zoom an image (D-ZOOM)

1. Press the [D-ZOOM +] key.
 - This will enlarge the center of the projected image one step.
2. To zoom in on the center of the projected image more, press the [D-ZOOM +] key again. To zoom out, press the [D-ZOOM -] key.
 - Each press of [D-ZOOM +] zooms in (increases the zoom factor), while [D-ZOOM -] zooms out. Holding down either key continuously scrolls the zoom factor.
3. While an image is zoomed, use the [▲], [▼], [◀], and [▶] keys to scroll the view to other parts of the image.
4. To exit the zoom operation, press the [ESC] key.

To momentarily blank the image and mute the audio (BLANK)

1. Press the [BLANK] key.
 - This blanks the screen by displaying the blank screen image specified by the Setup Menu “Blank Screen” setting (page 21) and mutes the audio.
2. To resume normal image and sound, press the [BLANK] key (or [ESC] key).

To freeze an image (FREEZE)

Press the [FREEZE] key to freeze the current input source image. To return to the real-time input source image, press the [FREEZE] key again or press the [ESC] key.

To auto adjust an image (AUTO)

Press the [AUTO] key.

- Pressing the [AUTO] key automatically adjusts the frequency and phase in accordance with the input signal, which can reduce flickering and other projected image problems.
- This operation is supported while the input source is Computer (RGB).

To change the aspect ratio of the projected image (ASPECT)

Press the [ASPECT] key to cycle through the aspect ratio settings for the projected image.

The table below shows the settings available for each type of input source.

Input Source	Pressing the [ASPECT] key will toggle between these settings:
RGB, HDMI (PC)	Normal → Full → 16:9 → 16:10
Component, HDMI (DTV)	Normal → 16:9 → 16:10 → 4:3

Description of Each Setting

Normal: Projects at the projector's maximum possible size while maintaining the input signal aspect ratio.

Full: Projects at the projector's maximum possible size by enlarging or reducing the input signal.

16:9: This setting specifies a 16:9 aspect ratio, which is the same as a movie screen, high-definition TV, etc. Using this setting when the input signal is a 16:9 image that has been squeezed to a 4:3 image causes the image to be displayed with its normal 16:9 aspect ratio.

16:10: This setting specifies a 16:10 aspect ratio. Use this setting to adjust the image for projection onto a 16:10 aspect ratio screen.

4:3: Regardless of the input signal aspect ratio, the image is always resized to an aspect ratio of 4:3 for projection.



Note

- For details about how the aspect ratio setting affects the projected image, see “Aspect Ratio Setting and Projection Image” (page 35).
- You can also change the aspect ratio using the Setup Menu “Screen Settings → Aspect Ratio” setting (page 20).



Important!

- Note that enlarging or reducing the size of an image using the [ASPECT] key for commercial purposes or public presentation may infringe on the legally protected copyright of the copyright holder of the original material.

To adjust image brightness (FUNC)

1. Press the [FUNC] key. On the menu that appears, select “Brightness” and then press the [ENTER] key.
2. On the brightness adjustment screen that appears, use the [◀] and [▶] keys to adjust brightness.
3. To hide the window, press the [ESC] key.

To change the color mode (FUNC)

1. Press the [FUNC] key. On the menu that appears, select “Color Mode” and then press the [ENTER] key.
 - This displays the color mode selection window. The currently selected color mode is the one whose button is selected (filled in).
2. Use the [▼] and [▲] keys to move the highlighting to the color mode you want to select, and then press the [ENTER] key.
 - This will select the button next to the highlighted color mode name.
 - For details on what each color mode does, see “Image Adjustment 1 → Color Mode” (page 19).
3. To hide the window, press the [ESC] key.



Important!

- The color mode cannot be selected in the following cases.
 - When “Off” is selected for the Eco Mode setting (page 15)

Adjusting the Volume Level (VOLUME)

You can use the remote controller [VOLUME +] and [VOLUME -] keys to adjust the volume level of the audio that is output from the AUDIO OUT terminal.

To adjust the volume level

- 1. Press the [VOLUME +] or [VOLUME -] key.**
 - This causes the “Volume” screen to appear on the projected image.
- 2. Press the [VOLUME +] key to increase the volume, or the [VOLUME -] key to lower the volume.**
- 3. After the setting is the way you want, press the [ESC] key.**

To mute the audio

- 1. Press the [VOLUME +] or [VOLUME -] key to display the “Volume” screen.**
- 2. Press the [ENTER] key.**
 - This stops output from the speaker.
- 3. To restore the audio, press the [VOLUME +] or [VOLUME -] key.**

Eco Mode (ECO)

The following Eco Mode settings are available to specify whether priority should be given to low-power, low-noise operation or to projection brightness.

On: Enables manual adjustment to balance the needs of low-power, quiet operation and projection brightness.

Off: Give top priority to projection brightness.

To select the Eco Mode

1. Press the [ECO] key.

- This causes “Eco Mode” window to appear on the projection screen.

2. Use the [◀] and [▶] keys to select the setting you want.

- If you select “On” here, go to step 3. If you select “Off”, jump to step 4.

3. Perform the following steps to adjust the “Eco Level” (the balance between low-power, quiet operation and projection brightness).

- ① Press the [▼] key to move the highlighting to the Eco Level.
- ② Use the [◀] and [▶] keys to adjust the Eco Level to the setting you want.
Fewer 🌿 marks gives higher priority to projection brightness. A greater number gives high priority to low-power, quiet operation.

4. To hide the window, press the [ESC] key.



Note

- While “Off” is selected for the Eco Mode setting, you also can specify whether brightness or color should be given emphasis. For details, see “Image Adjustment 1 → Eco Off Mode” (page 20).

Using the Presentation Timer (TIMER)

The presentation timer shows a countdown from a preset time value. You can use it to keep track of how much time has elapsed during your presentation, and to limit a presentation to a preset amount of time. You can configure the presentation timer so it is displayed in the projected image.



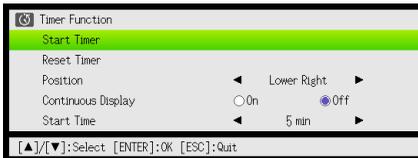
To display the timer

When the timer is not displayed on the projected image, press the [TIMER] key once.

The timer will appear for about five seconds and then disappear automatically if the “Off” is selected for the “Continuous Display” setting on the timer function menu.

To display the timer function menu

When the timer is not displayed on the projected image, press the [TIMER] key twice. If the timer is displayed, press the [TIMER] key once.



Use this menu to start, pause, resume, and reset the timer, and to configure various timer settings.

To configure timer settings

1. Use the [TIMER] key to display the timer function menu.
2. Use the [▼] and [▲] keys to select the “Position”, “Continuous Display”, or “Start Time” setting and then change the settings as described in the table below.

To do this:	Perform this operation:
Reposition the timer on the projected image	Select “Position”, and then use the [◀] and [▶] keys to select one of the following settings: “Lower Right”, “Upper Right”, “Upper Left”, “Lower Left” (Initial default: Lower Right).
Enable or disable continuous display of the timer	Select “Continuous Display”, and then use the [◀] and [▶] keys to select either “On” or “Off” (Initial default: Off). On: Once the timer is displayed, it remains displayed until you display a different dialog box or you press the [ESC] key. Off: The timer automatically disappears about five seconds after it is displayed.
Specify the timer countdown start time	Select “Start Time”, and then use the [◀] and [▶] keys to specify the countdown start time you want. You can set a start time from five to 60 minutes, in five-minute steps (Initial default: 20 minutes).

3. To save your settings and close the timer function menu, press [ESC].
 - To start the timer immediately after changing its settings, use [▼] and [▲] to select “Start Timer” on the timer function menu and then press the [ENTER] key before pressing [ESC] in the step above.

To start a countdown timer operation

1. Use the [TIMER] key to display the timer function menu.
2. Select “Start Timer” and then press the [ENTER] key.
 - This will close the timer function menu and start the timer countdown.
 - After the countdown reaches 00:00, it will start a 60-minute count up operation (from –00:01 to –60:00). The numerals of the timer display are red (indicating that the presentation is over time) during a count up operation.

To pause the timer countdown

- 1.** Use the [TIMER] key to display the timer function menu.
- 2.** Select “Pause Timer” and then press the [ENTER] key.

To resume a paused timer countdown

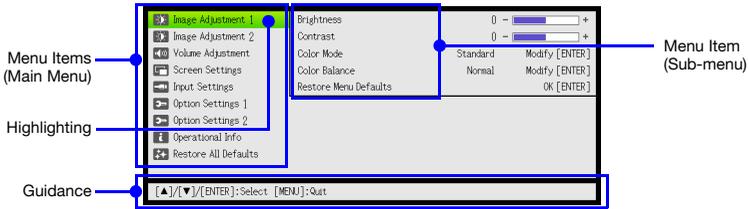
- 1.** Use the [TIMER] key to display the timer function menu.
- 2.** Select “Restart Timer” and then press the [ENTER] key.

To reset the timer to its start time

- 1.** Use the [TIMER] key to display the timer function menu.
- 2.** Select “Reset Timer” and then press the [ENTER] key.
 - This will reset the time to the “Start Time” setting.

Using the Setup Menu (MENU)

Pressing the [MENU] key displays the Setup Menu shown below on the projection screen. You can use this menu to adjust projected image brightness, contrast, and other settings, and to change projector settings.



The guidance shows the key operations that can be performed for the currently selected (highlighted) menu item.

Basic Setup Menu Operations

To do this:	Perform this operation:
Display the Setup Menu Exit the Setup Menu	Press the [MENU] key. Pressing the [MENU] key to exit the Setup Menu will save the settings you configured while it was displayed.
Select a menu item	Use the [▲] and [▼] keys to move the highlighting to the menu that contains the menu item you want to select and then press the [ENTER] key. Next, use the [▲] and [▼] keys to move the highlighting to the menu item you want to select.
Configure the setting of a menu item	<ul style="list-style-type: none"> ● If a menu item that has options or setting values to the right, use the [◀] and [▶] keys to change the setting. ● For a menu item that has “Modify [ENTER]” or “OK [ENTER]” to the right, press the [ENTER] key to display a dialog box for configuring the setting.

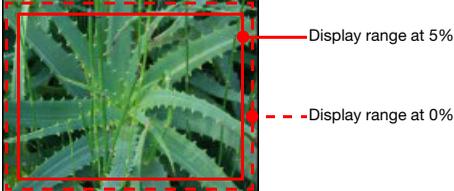
Setup Menu Settings

- One or more letters (such as RC) after the menu item name indicates an item that is available only when one or more particular input source is selected. The letters indicate the input source(s) where the menu item is available.

R: RGB input, **C:** Component input, **H:** HDMI (PC) input, **D:** HDMI (DTV) input

- A menu item that does not have any letter after it will be available regardless of the input source.
- The initial default setting is indicated by an asterisk (*).

Use this menu item:	To do this:
Image Adjustment 1 → Brightness	Adjust projected image brightness.
Image Adjustment 1 → Contrast	Adjust projected image contrast.
Image Adjustment 1 → Color Mode	Select one of the following projected image color modes: “Standard*1”, “Graphics”, “Theater*2”, “Blackboard”, “Natural”. *1 Initial default when RGB or HDMI (PC) is selected for input. *2 Initial default when Component or HDMI (DTV) is selected for input.
Image Adjustment 1 → Color Balance	Select one of the following color balance presets: “Warm”, “Normal*”, “Cold”. Also can be used to separately adjust red, green, and blue.

Use this menu item:	To do this:
Image Adjustment 1 → Eco Off Mode	When “Off” is selected for the “Option Settings 1 → Eco Mode” setting, specify either “Bright” (brightness priority) or “Normal*” (hue priority) as the image quality setting.
Image Adjustment 1 → Restore Menu Defaults	Return all of the items in the “Image Adjustment 1” main menu to their initial defaults for the currently projecting image source.
Image Adjustment 2 → Vertical Position (RC)	Adjust the vertical and horizontal positions of the input source image in relation to the target screen.
Image Adjustment 2 → Horizontal Position (RC)	
Image Adjustment 2 → Frequency (R)	When vertical bands appear in the projected image while RGB is selected as the input source, it means that the frequency setting is not correct. When this happens, use this setting to adjust the frequency manually. If, for some reason, your manual frequency settings cause the image input from the computer to disappear from the projection, you can press the [AUTO] key to perform an auto adjust operation, which should cause the image to appear.
Image Adjustment 2 → Phase (R)	Adjust the phase of the RGB input signal when the image flickers because the projector phase and RGB input signal phase do not match.
Image Adjustment 2 → Overscan (CD)	Adjust the overscan amount for an input video signal within the range of 0% to 5%*. The size of the border area displayed on the projection screen depends on the setting value. A smaller value results in a wider border area as shown below. 
Image Adjustment 2 → Restore Menu Defaults (RCD)	Return all of the items in the “Image Adjustment 2” main menu to their initial defaults for the currently projecting image source.
Volume Adjustment → Volume	See “Adjusting the Volume Level (VOLUME)” (page 14) for more information.
Volume Adjustment → Restore Menu Defaults	Return the Volume setting to its initial default for the currently projecting image source.
Screen Settings → Keystone Correction	Use this sub-menu to perform vertical keystone correction of the projected image.
Screen Settings → Aspect Ratio (RCHD)	Select an aspect ratio setting for the projected image. See “To change the aspect ratio of the projected image (ASPECT)” (page 12) for more information.
Screen Settings → Projection Mode	Specify whether projection will be from the front of the screen or the back of the screen. Front*: Select this option to project from the front of the screen. Rear: Select this option to project from the back of the screen. This setting flips the front projected image horizontally.
Screen Settings → Ceiling Mount	Set up the projector to be hung from a ceiling. On: Select when the projector is hung from a ceiling. Since the bottom of the projector is upwards, the projected image is flipped both horizontally and vertically. Off*: Select when the projector is used on a desktop. This projects the image assuming that the top of the projector is upwards.

Use this menu item:	To do this:
Screen Settings → No Signal Screen	Select one of the following as the projection image whenever there is no input signal being input to the projector: “Blue”* (blue screen), “Black” (black screen), “Logo” (projector built-in logo).
Screen Settings → Blank Screen	Select one of the following as the projection image whenever the [BLANK] key is pressed: “Blue”* (blue screen), “Black” (black screen), “Logo” (projector built-in logo).
Screen Settings → Restore Menu Defaults	Return all of the items in the “Screen Settings” main menu to their initial defaults for the currently projecting image source.
Input Settings → COMPUTER Terminal (RC)	Specify the method to be used to identify the COMPUTER terminal input signal. Auto*: Projector automatically identifies the COMPUTER terminal input signal. RGB: Always assumes the COMPUTER terminal input signal is an RGB signal. Component: Always assumes the COMPUTER terminal input signal is a component video signal.
Input Settings → RGB Level Adjust (R)	Specifies whether level adjustment of the input RGB signal is enabled (On*) or disabled (Off). Leaving this setting “On” will normally optimize the projected image. However, depending on the input signal, there may be cases when this setting does not optimize the image and may even distort it. If this happens, change this setting to “Off”.
Input Settings → Signal Name Indicator	Specify whether the newly selected input signal type should be displayed (On*) or not displayed (Off) when the [INPUT] key is pressed to change the input signal.
Input Settings → Restore Menu Defaults	Return all of the items in the “Input Settings” main menu to their initial defaults for the currently projecting image source.
Option Settings 1 → Auto Adjust (R)	Specify whether the projector should detect the RGB input signal type (resolution, frequency) and adjust the projection image accordingly. On*: Auto Adjust enabled. Off: Auto Adjust disabled.
Option Settings 1 → Eco Mode	See “Eco Mode (ECO)” (page 15).
Option Settings 1 → Auto Power Off	Specify the amount of time of projector operation and input signal inactivity to be allowed before Auto Power Off is triggered to turn off projector power automatically. Auto Power Off can be disabled, if you want. 5 min, 10 min*, 15 min, 20 min, 30 min: Time until Auto Power off is triggered. Off: Disables Auto Power Off.
Option Settings 1 → Password	See “Password Protection” (page 23).
Option Settings 1 → Direct Power On	Enable (On) and disable (Off*) projector auto power on as soon as the projector’s AC power cord is plugged into a power outlet.
Option Settings 1 → Language	Specify the display language. English, French, German, Italian, Spanish, Swedish, Portuguese, Dutch, Norwegian, Polish, Finnish, Czech, Turkish, Russian, Lithuanian, Vietnamese, Thai, Malay, Indonesian, Arabic, Chinese (Simplified), Chinese (Traditional), Korean, Japanese
Option Settings 1 → Restore Menu Defaults	Return all of the items in the “Option Settings 1” main menu to their initial defaults for the currently projecting image source.
Option Settings 2 → High Altitude	Turn the high-altitude fan speed setting on or off in accordance with the altitude of the area where you are using the projector. On: Select this setting when using the projector in a high altitude (1,500 to 3,000 meters / 5,000 to 10,000 feet above sea level) area where air is thin. This setting increases cooling efficiency. Off*: Select this setting at normal altitudes (up to 1,500 meters / 5,000 feet).
	 Important! <ul style="list-style-type: none"> Do not use this projector at altitudes greater than 3,000 meters (10,000 feet) above sea level.

Use this menu item:	To do this:
Option Settings 2 → Timer Function	Display the timer function menu. For details, see “Using the Presentation Timer (TIMER)” (page 16).
Option Settings 2 → Restore Menu Defaults	Return all of the items in the “Option Settings 2” main menu to their initial defaults for the currently projecting image source.
Operational Info (RCHD)	Display the projector information below. Input Signal, Signal Name, Resolution, Horizontal Frequency, Vertical Frequency, Scan System, Light Time, Version (projector ROM version)
Restore All Defaults → Unit Operating Time	Display the cumulative operating time of this unit. This time cannot be initialized.
Restore All Defaults → Restore All Defaults	Initialize all Setup Menu item settings, except for those below. Option Settings 1 → Language, Option Settings 1 → Password, Operational Info → Light Time, Operational Info → Version, Restore All Defaults → Unit Operating Time

Password Protection

The password feature lets you keep unauthorized individuals from using the projector. You can specify whether password input is required whenever you turn on the projector, and you can specify and change the password as required. Use the Setup Menu “Option Settings 1 → Password” setting to configure password settings.

Using the Password Feature

Note the following precautions whenever you use the password feature.

- The password feature protects against unauthorized use of the projector. Note that it is not an anti-theft measure.
- You will need to enter the initial factory default password the first time you use the projector after turning on the password feature. Change the initial factory default password to a different one of your choice as soon as possible after turning on the password feature.
- Remember that password operations are always performed using the remote controller, so you should take care not to lose or misplace the remote controller.
- Also note that you will not be able to input the password if the remote controller batteries are dead. Replace the remote control batteries as soon as possible after it starts to go low.

If you forget your password...

If you forget the password, you will need to bring the following two items to your CASIO distributor to have the password cleared. Note that you will be charged to have the password cleared.

1. Personal identification (original or copy of your driver’s license, employee I.D., etc.)
2. Projector unit

Note that your CASIO distributor will not be able to clear the password of your projector unless you bring both of the items listed above.

Also, keep the projector’s warranty in a safe place.



Important!

- Having your password cleared using the procedure described above will return all of the settings of your projector, except for the Light Time, to their initial factory defaults.

Keep a written record of your password!

You will not be able to use the projector if you forget its password. We strongly suggest that you keep a written or other type of record of the password so you can look it up when necessary.

To change the password

1. Press the [MENU] key to display the setup menu.
2. Use the [▼] key to select “Option Settings 1”, and then press the [ENTER] key.
3. Use the [▼] key to select “Password”, and then press the [ENTER] key.
 - This will display a dialog box prompting you to enter the current password.
4. Enter the current password.
 - The password of your projector is not really a “word” made up of letters, but rather a sequence of remote controller key inputs.
 - If the projector is still protected by the factory default password, perform the key operation shown below to enter it.



5. After entering the current password, press the [ENTER] key.
 - This displays the Password setting screen.
6. Use the [▼] key to select “Change Password”, and then press the [ENTER] key.
 - This will display a dialog box prompting you to enter the new password.
7. Enter a key sequence up to eight key operations long.
 - You can use any of the following keys as part of your password key sequence.
[INPUT], [MENU], [BLANK], [FREEZE], [ECO], [VOLUME +], [VOLUME -], [D-ZOOM +], [D-ZOOM -], [KEYSTONE +], [KEYSTONE -], [▲], [▼], [◀], [▶], [TIMER], [AUTO], [ASPECT], [FUNC]
8. After entering the new password, press the [ENTER] key.
 - This will display a dialog box prompting you to enter the same password again.
9. Re-enter the same password key sequence you entered in step 7 and then press the [ENTER] key.
 - The message “Your new password has been registered.” indicates that the password has been changed. Press the [ESC] key.
 - If the password you entered in this step is different from the one you entered in step 7, the message “The password you input is wrong.” appears. Press the [ESC] key to return to step 7.

To change the power on password setting

- 1. Perform steps 1 through 5 under “To change the password” (page 24) and display the Power On Password setting screen.**
- 2. After confirming that “Power On Password” is selected, use the [◀] and [▶] keys to select either the “On” or “Off” setting.**
 - Changing the setting from “Off” to “On” will cause the “Prompt for password when power is turned on?” dialog box to appear. Press the [ENTER] key to confirm that you want to turn on power on password protection, or [ESC] to exit the dialog box without changing the setting.
- 3. After you are finished, press the [MENU] key to exit the setup menu.**

Cleaning the Projector

Make it a habit to clean the projector at regular intervals as described in this section. Before cleaning the projector, be sure to unplug it from the power outlet and make sure it is cooled down completely.

Cleaning the Projector Exterior

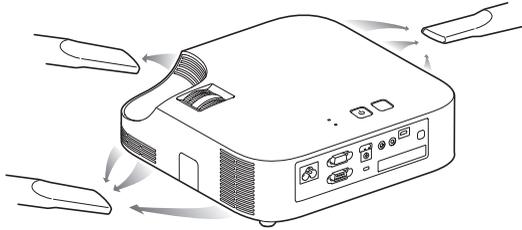
Wipe the exterior of the projector with a soft cloth that has been moistened in a weak solution of water and a mild neutral detergent. Be sure to wring all excess moisture from the cloth before wiping. Never use benzene, alcohol, thinner, or any other volatile agent for cleaning.

Cleaning the Lens

Carefully wipe the lens with a commercially available lens cloth or optical lens paper, like those for eyeglasses or camera lenses. When cleaning the lens, do not apply undue force and take care to avoid damaging the lens.

Cleaning Vents

Dust and dirt tend to collect around the intake vents. Because of this, you should use a vacuum cleaner to clean away accumulated dust and dirt periodically (about once a month) as shown below.



Important!

- Continued use of the projector after dust has accumulated around the intake vents can cause overheating of internal components and lead to malfunction.
- Certain operating conditions also can cause dirt and dust to accumulate around the projector's exhaust vents. If this happens, use the same procedure as that described above to clean the exhaust vents.

Troubleshooting

Indicators

The POWER/STANDBY indicator and STATUS indicator change to show the current status of the projector as described in the tables below.

POWER/STANDBY indicator

When the indicator is doing this:	It means this about the projector:
Lit red	Connected to a power source, but turned off (standby mode)
Flashing green	Warming up after being turned on
Lit green	Power on, operation normal
Flashing red	Internal process in progress immediately after power off

STATUS indicator

When the indicator is doing this:	It means this about the projector:
Lit green	“On” selected for the “Eco Mode” setting
Lit (or flashing) red	Error
Lit (or flashing) amber	Error



Note

- The POWER/STANDBY and STATUS indicators both light amber immediately after the projector is plugged into a power outlet.

Error Indicators and Warning Messages

Warning messages and indicators let you know what the problem is when a projector error occurs.

- When an error occurs, wait until the fan stops before unplugging the AC power cord. If you unplug the AC power cord while the fan is still operating, an error may occur when you plug the AC power cord back in.
- Press the [ESC] key to clear the warning message.

Indicator/Error Message	Description and Required Action
<p>POWER : Green steady</p> <p>STATUS : – (Green steady when “On” is selected for the “Eco Mode” setting.)</p> <p>Message : Internal temperature is too high. Check projector air vents for blockage.</p>	<p>The projector’s internal temperature is very high. Perform the following steps.</p> <p>① Check for any blocking of the projector’s intake vents and exhaust vents, and make sure that there is sufficient space around the projector. See “Setup Precautions” (page 6).</p> <p>② If there is dust accumulated around the intake vents and/or exhaust vents, turn off the projector and remove it. See “Cleaning the Projector” (page 26).</p>
<p>POWER : Green steady → Red steady</p> <p>STATUS : –</p> <p>Message : Internal temperature is too high. The projector will turn off.</p>	<p>Power has turned off automatically due to internal overheating. Perform the following steps.</p> <p>① Check for any blocking of the projector’s intake vents and exhaust vents, and make sure that there is sufficient space around the projector. See “Setup Precautions” (page 6).</p> <p>② If there is dust accumulated around the intake vents and/or exhaust vents, remove it. See “Cleaning the Projector” (page 26).</p> <p>If there is no problem with the projector’s vents, confirm that the POWER/STANDBY indicator is lit red (without flashing), and then turn power back on again. If the error occurs again when you turn power back on, contact your retailer or nearest authorized CASIO Service Center.</p>
<p>POWER : Red steady</p> <p>STATUS : Amber flashing (0.5-second interval)</p> <p>Message : There is a problem with the fan. The projector will turn off.</p>	<p>Power has turned off automatically due to a fan problem. Confirm that the POWER/STANDBY indicator is lit red (without flashing) and that the fan has stopped. After checking the POWER/STANDBY indicator, disconnect the power cord from the projector and wait for all of the projector’s indicators to go out. Next, reconnect the power cord and turn projector power back on.</p> <p>If the error occurs again when you turn power back on, contact your retailer or nearest authorized CASIO Service Center.</p>
<p>POWER : Green steady</p> <p>STATUS : – (Green steady when “On” is selected for the “Eco Mode” setting.)</p> <p>Message : There is some problem with the system. The audio function may not operate correctly.</p>	<p>A system problem has occurred, which may cause problems with some functions. Turn off the projector, disconnect the power cord from the projector and wait for all of the projector’s indicators to go out. Next, reconnect the power cord and turn the projector back on.</p> <p>If the error occurs again when you turn power back on, contact your retailer or nearest authorized CASIO Service Center.</p>
<p>POWER : Red steady</p> <p>STATUS : Red steady</p> <p>Message : –</p>	<p>The projector was turned off automatically due to some problem that was probably caused by external digital noise or some other reason. Confirm that the POWER/STANDBY indicator is lit red (without flashing). After checking the POWER/STANDBY indicator, disconnect the power cord from the projector and wait for all of the projector’s indicators to go out. Next, reconnect the power cord and turn projector power back on.</p> <p>If the error occurs again when you turn power back on, contact your retailer or nearest authorized CASIO Service Center.</p>

Indicator/Error Message	Description and Required Action
POWER : Red steady STATUS : Red flashing (0.5-second interval) Message : –	The projector was turned off automatically because the light source unit turned off or did not turn on. After confirming that the POWER/STANDBY indicator is lit red (without flashing), unplug the power cord. Wait for a short while and then plug it back in and turn on the projector again. If the error occurs again when you turn power back on, contact your retailer or nearest authorized CASIO Service Center.
POWER : Red steady STATUS : Red flashing (2-second or 1-second interval) Message : –	Power has turned off automatically due to a projector memory error. Confirm that the POWER/STANDBY indicator is lit red (without flashing). After checking the POWER/STANDBY indicator, disconnect the power cord from the projector and wait for all of the projector's indicators to go out. Next, reconnect the power cord and turn projector power back on. If the error occurs again when you turn power back on, contact your retailer or nearest authorized CASIO Service Center.

Projector Troubleshooting

Check the following items whenever you experience any problem with the projector.

Problem	Cause and Recommended Action
Power does not turn on.	<ul style="list-style-type: none"> ● If the POWER/STANDBY indicator is not lit, the AC power cord is not connected correctly. Connect the AC power cord correctly. ● If the POWER/STANDBY indicator is lit red and the STATUS indicator is lit (or flashing) red or amber, it means some type of error has occurred. See "Error Indicators and Warning Messages" (page 28).
No image is projected or the projected image is abnormal.	<ul style="list-style-type: none"> ● The computer or video device connected to the projector is not turned on or it is not outputting a video signal. Make sure the connected computer or video device is turned on, and perform the required operation on it to output a video signal. ● The correct output source is not selected on the projector. On the projector, select the correct input source that corresponds to the connected device. ● Images may not project correctly when you have the component output terminal of a video device connected to the COMPUTER terminal of the projector.
Image color or display is very abnormal.	<p>The wrong option ("Component" or "RGB") may be selected for the "Input Settings → COMPUTER Terminal" setting on the setup menu. The image will not be projected correctly if "Component" is selected while the projector's COMPUTER terminal is connected to the RGB output terminal of a computer, or if "RGB" is selected while the projector's COMPUTER terminal is connected to the component video output terminal of a video device. On the setup menu, select "Auto" for the "Input Settings → COMPUTER Terminal" setting. See page 21.</p>
I can't understand messages or menus because they are the wrong language.	<p>Perform the following operation to select the language you want. See page 21.</p> <ol style="list-style-type: none"> 1. Press the [MENU] key to display the setup menu. 2. If the input signal is HDMI (PC), press [▼] four times and then press the [ENTER] key. If the input signal is RGB, Component, or HDMI (DTV), press [▼] five times and then press the [ENTER] key. 3. Press [▲] twice and then press the [ENTER] key to display the language selection menu. 4. Use the [▼] and [▲] keys to move the highlighting to the language you want to select and then press the [ENTER] key. 5. Press the [MENU] key to exit the setup menu.
No sound output from the AUDIO OUT terminal	<ul style="list-style-type: none"> ● The projector's volume level setting may be too low or muted. Use the remote controller [VOLUME +] and [VOLUME -] keys to adjust the volume level. See page 14. ● The volume level setting of the device connected to the projector is too low or the other device is not outputting audio. Adjust the volume level of the connected device. ● The audio output of the connected device may not be connected correctly to the projector's AUDIO IN terminal. Check the connection. See "Connecting Projector Cables" (page 7).
Strange color	<p>The input signal may not match projector settings. Try doing the following.</p> <ul style="list-style-type: none"> - Press the [FUNC] key and then select "Brightness" to adjust image brightness. - Press the [FUNC] key and then select "Color Mode" to change the color mode. - On the setup menu, use "Image Adjustment 1 → Color Balance" to adjust the projection image color balance.
Text is blurry.	<ul style="list-style-type: none"> ● The image may be out of focus. Adjust image focus. ● The current frequency and/or phase setting do not match the input signal. (Applies only when the input source is an RGB signal.) Press the [AUTO] key to execute an automatic adjustment operation. ● On the setup menu, perform the "Image Adjustment 2 → Frequency" and "Image Adjustment 2 → Phase" adjustments. (Applies only when the input source is an RGB signal.) See page 20.

Problem	Cause and Recommended Action
The message "Please input the password." appears and further operation is not possible.	The "Option Settings 1 → Password" setting on the setup menu is turned on, so the projector is password protected. Input the correct password, and then press the [ENTER] key. See page 23.
The remote controller does not work.	<ul style="list-style-type: none"> ● The remote controller batteries may be dead. Replace the batteries. ● The remote controller may be too far from the projector. Make sure the remote controller is within about five meters from the projector when performing operations.
The POWER/STANDBY indicator is lit red and the STATUS indicator is lit (or flashing) red or amber.	An error occurred. See "Error Indicators and Warning Messages" (page 28).
The light source unit does not light.	The light source unit has reached the end of its service life or it is malfunctioning. Contact your original dealer or authorized CASIO service center for replacement.
Power suddenly turns off and the projector restarts.	The projector periodically performs a self-check operation. In rare cases, the result of a self-check may cause the projector to restart automatically. This normally does not indicate malfunction, so you can continue using the projector. However, malfunction may be indicated if successive restarts keep occurring. If this happens contact your original dealer or authorized CASIO service center.



Important!

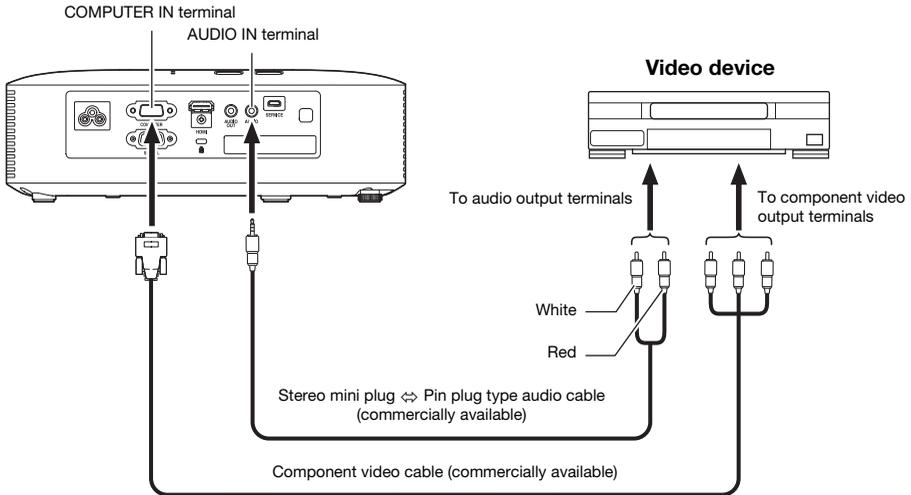
- Try performing the following steps, which may or may not return the projector to normal operation.
 1. Unplug the AC power cord and wait for at least 10 minutes.
 2. Plug the power cord back in and turn the projector back on again.
- If normal operation does not resume after you perform the above steps, take the projector to your retailer or authorized CASIO service center.

Connecting to a Component Video Output

This section explains how to establish a component video connection between the projector and a video device.

- Component video output terminals come in 3-terminal sets: Y-Cb-Cr or Y-Pb-Pr. Be sure to match the colors of the plugs on a component video cable with the colors of the terminals (Green: Y; Blue: Cb/Pb; Red: Cr/Pr).
- Note that connection only to an analog component video output terminal is supported. Connection to a digital output terminal is not supported.

Projector

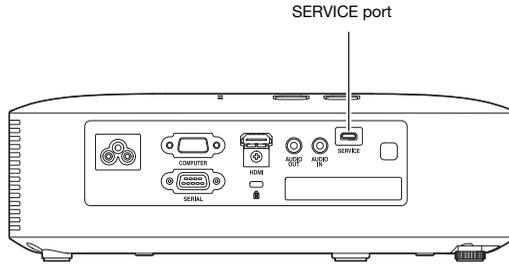


Updating Firmware

The projector's firmware (software in the projector flash ROM) can be updated from a computer connected to the projector's SERVICE port (USB port for ROM updating) with a USB cable.

To connect the projector's SERVICE port with a computer's USB port

Use a commercially available USB cable to connect the projector's SERVICE port to the computer's USB port.



Use a USB cable with a micro USB plug on one end for connection to the projector's SERVICE port, and a plug on the other end with a shape that is compatible with the computer USB port.



Note

- For details about how to update the firmware, see the “Projector Firmware Update Guide”, which is available at the CASIO website.

Hanging the Projector from a Ceiling

The projector can be hung from a ceiling. When doing so, the projector should be turned upside down, and secured to the ceiling.

For full details, contact the retailer where you purchased the projector.

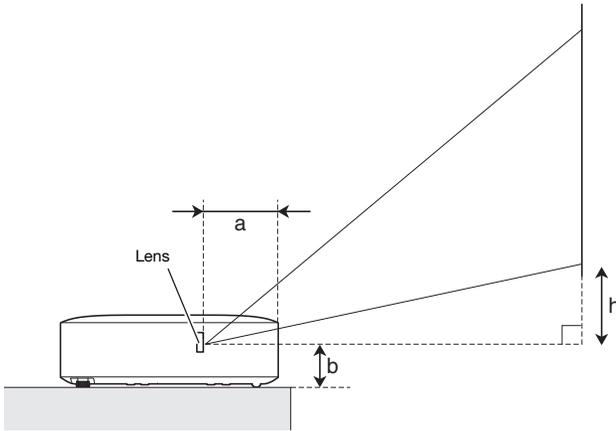


Important!

- When hanging the projector from a ceiling, make sure that it is at least one meter away from fire detectors, fire alarms, and other fire protection devices. Locating the projector too close to a fire protection device creates the risk of mis-operation of the device due to warm air exhausted from the projector. Also, avoid locating the projector close to fluorescent lights or other strong light sources. Bright light can shorten the operating range of the remote controller or even make remote control impossible. When selecting a location for the projector, be sure to test for proper operation of the remote controller.
- The vertical and horizontal orientation of the projected image is reversed from the normal configuration when projecting from a projector hung from the ceiling. You need to change the setup of the projector in order to correct for this. For details, see “Screen Settings → Ceiling Mount” (page 20) under “Setup Menu Settings”.

Projection Distance and Screen Size

The projection distance values below are for reference when setting up the projector.



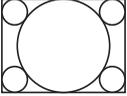
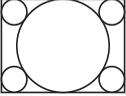
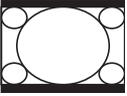
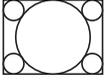
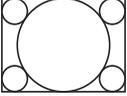
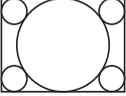
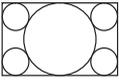
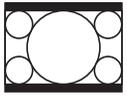
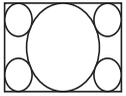
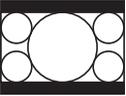
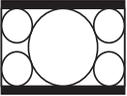
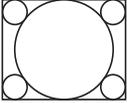
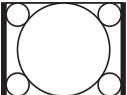
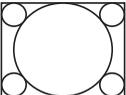
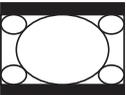
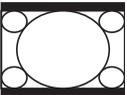
Projection Size		Approximate Projection Distance		h (cm / inch)
Screen Size (inch)	Diagonal (cm)	Minimum Distance (m / feet)	Maximum Distance (m / feet)	
30	76	0.83 / 2.72	0.93 / 3.04	10 / 3.9
40	102	1.15 / 3.77	1.28 / 4.20	13 / 5.3
60	152	1.79 / 5.87	1.99 / 6.52	20 / 7.9
77	196	2.33 / 7.66	2.59 / 8.50	26 / 10.2
80	203	2.43 / 7.97	2.70 / 8.85	27 / 10.6
100	254	3.07 / 10.07	3.41 / 11.17	34 / 13.2
150	381	4.67 / 15.32	5.18 / 16.99	50 / 19.8
200	508	6.27 / 20.57	6.95 / 22.80	67 / 26.4
300	762	9.47 / 31.08	10.49 / 34.43	101 / 39.6

- The projection distance is the approximate distance from the projector lens surface to the screen. The distance from the lens surface to the front edge of the projector case (a in the illustration) is approximately 94 mm/3.7 inches.
- “h” in the illustration and table indicates the distance between the center of the projector lens and the bottom edge of the projection screen. The height from the bottom edge of the projector to the center of the projector lens (b in the illustration) is approximately 58 mm/2.3 inches.

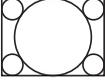
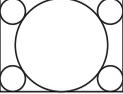
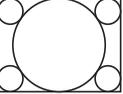
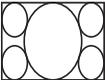
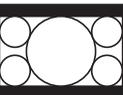
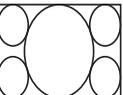
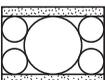
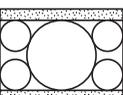
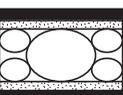
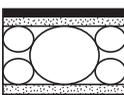
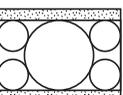
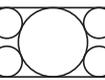
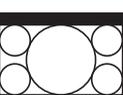
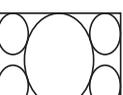
Aspect Ratio Setting and Projection Image

The following shows how images are projected in accordance with the type of the input signal and the aspect ratio setting of the projector.

Input source: RGB or HDMI (PC)

Input Signal	Normal	Full	16:9	16:10
 SVGA (800 × 600)				
 XGA (1024 × 768)				
 WXGA (1280 × 800)				
 SXGA (1280 × 1024)				

Input source: Component or HDMI (DTV)

Input Signal	Normal	16:9	16:10	4:3
 <p>4:3 Aspect Image</p>				
 <p>Squeezed Image</p>				
 <p>Letter Box Image</p>				
 <p>16:9 Aspect Image</p>				

Supported Signals



Important!

- Even if a signal is listed in the table below, it does not guarantee that you will be able to display its images correctly.

RGB Signal

	Signal Name	Resolution	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
VESA	640 × 480/60	640 × 480	31.5	60
	640 × 480/72	640 × 480	37.9	73
	640 × 480/75	640 × 480	37.5	75
	640 × 480/85	640 × 480	43.3	85
	800 × 600/56	800 × 600	35.2	56
	800 × 600/60	800 × 600	37.9	60
	800 × 600/72	800 × 600	48.1	72
	800 × 600/75	800 × 600	46.9	75
	800 × 600/85	800 × 600	53.7	85
	1024 × 768/60	1024 × 768	48.4	60
	1024 × 768/70	1024 × 768	56.5	70
	1024 × 768/75	1024 × 768	60.0	75
	1024 × 768/85	1024 × 768	68.7	85
	1152 × 864/75	1152 × 864	67.5	75
	1280 × 768/60	1280 × 768	47.8	60
	1280 × 800/60	1280 × 800	49.7	60
	1280 × 960/60	1280 × 960	60.0	60
	1280 × 1024/60	1280 × 1024	64.0	60
	1280 × 1024/75	1280 × 1024	80.0	75
	1280 × 1024/85	1280 × 1024	91.1	85
	1366 × 768/60	1366 × 768	47.7	60
	1400 × 1050/60	1400 × 1050	65.3	60
1440 × 900/60	1440 × 900	55.9	60	
1600 × 1200/60	1600 × 1200	75.0	60	
1680 × 1050/60	1680 × 1050	65.3	60	

Component Signal

	Signal Name	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
HDTV	1080p/50	56.3	50
	1080p/60	67.5	60
	720p/50	37.5	50
	720p/60	45.0	60
	1080i/50	28.1	50
	1080i/60	33.7	60
SDTV	576p/50	31.3	50
	576i/50	15.6	50
	480p/60	31.5	60
	480i/60	15.7	60

HDMI Signal

Signal Name	Horizontal Frequency (kHz)	Vertical Frequency (Hz)
640 × 480/60	31.5	60
800 × 600/60	37.9	60
1024 × 768/60	48.4	60
1280 × 768/60	47.8	60
1280 × 800/60	49.7	60
1280 × 960/60	60	60
1280 × 1024/60	64	60
1400 × 1050/60	65.3	60
SDTV (480p)	31.5	60
SDTV (576p)	31.25	50
HDTV (720p) (50)	37.5	50
HDTV (720p) (60)	45	60
HDTV (1080i) (50)	28.13	50
HDTV (1080i) (60)	33.75	60
HDTV (1080p) (50)	56.25	50
HDTV (1080p) (60)	67.5	60

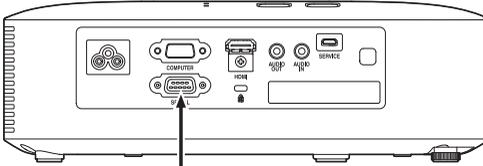
Projector RS-232C Control

When there is a serial connection between the projector and a computer, you can control the projector using RS-232C commands sent from the computer.

To establish a serial connection between the projector and a computer

Connect the projector and computer as shown in the illustration below.

Projector



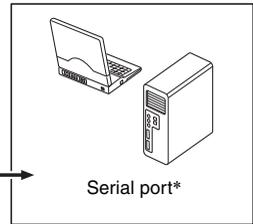
Serial port (RS-232C)

D-Sub 9-pin (female)

D-Sub 9-pin (female)

Commercially available serial cable (cross)

Computer



Serial port*

Using Control Commands

This section explains the commands that are used to control the projector from a computer.

Command Send Format

Communication Protocol	Configure your computer's serial port with the following settings.	
	Data Rate	19200 bps
	Data Bit	8 bit
	Parity	None
	Stop Bit	1 bit
	Flow Control	None
Read Command	Send this command when you want information about the current setup of the data projector.	
	Send Format	(<command name>?)
	Receive Format	(<applicable command setting range>,<current setting>)
	Command Send Example	<p>[[V0L?]] sent from the computer to the projector.</p> <p style="text-align: center;">↓</p> <p>[[0-30.15]] returned from the projector to the computer.</p>
Write Command	Send this command to control the data projector (power on/off, etc.) and to write data to it.	
	Send Format	(<command name><setting value>)
	Command Send Example	<p>[[V0L0]] sent from the computer to the projector.</p> <p style="text-align: center;">↓</p> <p>Projector volume setting becomes 0.</p>

- See the “Command List” for details about command names and settings.
- All commands use ASCII characters and decimal format integers.
- The projector will return a question mark (?) when it is sent a command it cannot recognize. Also, any command that attempts to set a value that is outside the applicable allowable range will be ignored.
- If the projector is performing a process initiated by a previously sent command, a projector key operation, or a remote controller key operation, send of the next command must wait until the projector completes the previous process.

Command List

- Only the following functions are supported while the projector is turned off. Do not try to send any other command to the projector.
 - Power on/off: Read
 - Power on: Write
 - Get light time: Read
- Input of a valid signal must be in progress in order to use a command to turn on blank screen or change the aspect ratio.

R: Read enabled W: Write enabled

Function	Command Name	RW	Setting Range
Power On/Off:	PWR	RW	0: Off, 1: On
Input Switching: 0: Switches the input source to the COMPUTER terminal and changes the COMPUTER terminal setting to RGB. 1: Switches the input source to COMPUTER terminal and changes the COMPUTER terminal setting to component. 6: Switches the input source to COMPUTER terminal and changes the COMPUTER terminal setting to Auto. 7: Switches the input source to HDMI.	SRC	RW	0: RGB, 1: Component, 6: Auto (RGB/Component), 7: HDMI
Blank Screen: Switches the blank screen on or off.	BLK	RW	0: Off, 1: On
Volume: Specifies a value to adjust the volume level. This setting is applied to the input source signal that is currently being projected by the projector.	VOL	RW	0 to 30
Color Mode: Selects the color mode.	PST	RW	1: Graphics, 2: Theater, 3: Standard, 4: Blackboard, 5: Natural
Aspect Ratio: Specifies the aspect ratio.	ARZ	RW	0: Normal, 1: 16:9, 4: Full, 7: 16:10 (when RGB or HDMI (PC) is selected for input) 1: 16:9, 2: Normal, 6: 4:3, 7: 16:10 (when Component or HDMI (DTV) is selected for input)
Get Light Time: Gets the light time from the projector.	LMP	R	0- Unit: Hours
Eco Mode: Enter Eco Mode.	PMD	RW	0: Off (Bright), 1: Off (Normal), 3: On (Manual 1), 4: On (Manual 2), 5: On (Manual 3), 6: On (Manual 4), 7: On (Manual 5)
Freeze: Switches freeze on or off.	FRZ	RW	0: Off, 1: On
Keystone Correction: Specifies the keystone correction setting as a value that corresponds to the typical Setup Menu "Keystone Correction" settings below. 0: Keystone Correction -60 60: Keystone Correction 0 120: Keystone Correction +60 Example: 65 here, specifies a setting equivalent to Keystone Correction +5.	KST	RW	0 to 120

Function	Command Name	RW	Setting Range
Keystone Correction +: Raises the current keystone correction setting by 1.	KSP	W	0 to 120
Keystone Correction -: Lowers the current keystone correction setting by 1.	KSM	W	0 to 120
Key: Operation executed when a key is pressed.	KEY	W	1: ▲, 2: ▼, 3: ◀, 4: ▶, 5: ENTER, 6: ESC, 10: FUNC, 11: MENU, 12: POWER, 13: AUTO, 14: INPUT, 15: TIMER, 16: ASPECT, 17: BLANK, 18: FREEZE, 19: ECO, 20: KEYSTONE +, 21: KEYSTONE -, 22: D-ZOOM +, 23: D-ZOOM -, 24: VOLUME +, 25: VOLUME -
Setup Type: Specifies how the projector is set up relative to screen for projection. 0: Projection to a screen in front of the projector*1 1: Ceiling mounted projection from behind the screen*2 2: Projection from behind the screen*1 3: Ceiling mounted projection to a screen in front of the projector*2	POS	RW	0 to 3
APO: Used to change the Auto Power Off setting (trigger time setting or Auto Power Off disable).	APO	RW	0: Off, 1: 5 minutes, 2: 10 minutes, 3: 15 minutes, 4: 20 minutes, 5: 30 minutes
Error: Reads the projector error status.	STS	R	0: Normal, 1: Fan error, 2: Temperature error, 7: Light error, 16: Other error
Volume +: Raises the current volume setting by 1.	VLP	W	0 to 30
Volume -: Lowers the current volume setting by 1.	VLM	W	0 to 30
Mute: Switches mute on or off.	MUT	RW	0: Off, 1: On

*1 Top of projector upwards

*2 Top of projector downwards

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