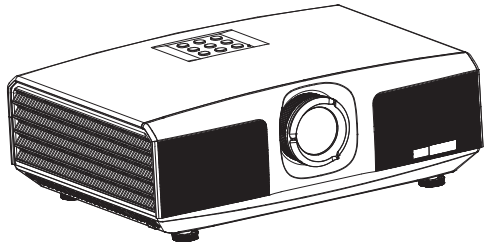




APPOTRONICS

DLP PROJECTOR DISPLAY

User Manual



- Please read this manual carefully before using this equipment and keep it for future reference.
- Please read "Important Safety Instructions" carefully before using this product.

Declaration

Copyright

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All trademarks and registered trademarks are the property of their respective owners.

Disclaimer

Appotronics Corporation does not make any express or implied representations or warranties with respect to any of the contents of this manual, and does not provide any warranties with respect to merchantability or fitness for a particular purpose. In addition, Appotronics Corporation reserves the right to revise this publication and to modify the contents of this document at any time without notice to anyone.

Warranty

Under normal use and storage conditions, Appotronics Corporation provides warranty on any materials and process defects of this product. Proof of purchase date must be provided when you require the warranty service. If the product is found to be defective during the warranty period, the sole obligation of Appotronics Corporation and the exclusive remedy are to replace any defective parts (including labor service). When you find the product is defective, immediately notify the dealer to obtain the warranty service.

IMPORTANT: If the customer fails to use the product in accordance with the written instructions, the above warranty will not apply. In particular, the ambient humidity must be between 10% and 90%, the temperature is between 0°C and 40°C, and the altitude is below 2000 meters. Do not operate the projector in a dusty environment.

For additional information, please visit www.appotronics.com.

Contents

Declaration	2	Connecting to the S-video Device	25
Contents	3	Connecting to the Composite Video Device.....	25
Important Safety Instructions	4	Operation	26
General Safety Instructions.....	4	Powering On the Projector	26
Security Tips	4	Menus.....	26
FCC Statement	8	DISPLAY	27
cTUVus	8	PICTURE.....	28
Overview	9	SOURCE.....	29
About This Manual	9	SETUP	30
Safety Warnings and Guides	9	ADVANCE	32
Projector Features	10	ABOUT	33
Packaging Overview.....	11	Serial Port	34
Projector Appearance.....	12	Serial Port	34
Remote Control.....	14	Communication device.....	34
Replacing the Battery of the Remote Control	16	Reference Command List.....	35
Lens shift	17	Maintenance	36
Installation	18	Projector Maintenance	36
Projection mode.....	18	Troubleshooting	37
Adjusting the Projected Picture.....	19	Indicator.....	38
Device Connection	21		
Connecting the Projector to the PC or Laptop Computer.....	21		
Connecting to the Audio or Video Device.....	21		
Connecting the Projector to the Computer or Display	22		
Connecting the Projector to the Video Source Device	23		
Connecting the Projector to the Audio Source	24		
Connecting the HDMI Device	24		
Connecting to the Component Video Device	25		

Important Safety Instructions

General Safety Instructions

- Please read this manual carefully before using this equipment and keep it for future reference.
- The device shall be installed, operated and maintained by a qualified professional authorized by the company.
- All warnings listed on this projector and listed in this manual should be observed.
- Strictly observe all instructions on operations and usage.
- Strictly observe all local installation standards.

Security Tips

This device complies with international safety standards IEC60950-1, EN60950-1, UL60950-1, CAN/CSA C22.2 No.60950-1. These standards are safety standards for information technology equipment that are subject to stringent requirements for the use of critical safety components, components, materials and insulators in order to protect the user and operator from the following hazards:

- Electric shock
- Energy-related hazards
- Fire
- Heat-related hazards
- Mechanical hazards
- Radiation
- Chemical hazards

In addition, these standards also raise limitations in many ways, such as internal and external temperature rise levels, radiation levels, mechanical stability and intensity, peripheral construction and fire protection devices. Even if the normal operation of the equipment fails, the single-point fault simulation test can also ensure that the device can use the fuse, thermal circuit breakers, overcurrent protection devices and similar devices to provide adequate protection of the human body.

This manual is for authorized users only for professional purposes and these persons should be familiar with the potential hazards that may arise from this product. Only qualified maintenance personnel who are familiar with such hazards can open the product shell to perform maintenance operations.

Terms:

- Maintenance personnel:
Refer to the professional personnel who may use the training and skills to avoid possible harms to themselves or others when they are in the maintenance contact area or the device in the restricted contact area has obvious dangers.
- Users:
Refer to all persons except maintenance personnel.

Important Safety Instructions

■ Preventing the risk of electric shock

- ◆ The projector should use AC power. Make sure that the main voltage and capacitance match the rated power of the projector. If the installation environment cannot meet the AC power requirements, please contact the electrician.
- ◆ The installation can only be carried out by qualified technical personnel in accordance with local electrical codes and regulations.
- ◆ This device uses a three-terminal power cable that includes a single-phase line that protects the ground wire (PE). If the installation environment cannot meet the AC power requirements, please contact the electrician. Do not ignore the role of grounding.
- ◆ Turn off the power to the projector and unplug the power cord to cut off all power connections from the projector.
- ◆ If you need to extend the cable, use a power cable with the current rated value not lower than that of the projector. If the rated value of the power cable is lower than the current value of the projector, it may cause overheating.
- ◆ Do not disassemble the projector. When it needs to be maintained or repaired, hand it over to a trained and authorized service person.
- ◆ Do not spill any liquid on the projector.
- ◆ To better protect the product during thunderstorms or when it is not used for a long period of time, unplug the power plug from the wall socket. This can prevent lightning or power line surges from causing damage to the projector.

■ Preventing personal injury

- ◆ To prevent personal injury and physical damage, refer to this manual and all the labels on the system before plugging the power plug into the electrical outlet, or commissioning the projector.
- ◆ To prevent injury, ensure that the lens and all covers are installed correctly.
- ◆ Before attempting to move or remove the projector, turn off the projector and unplug the power plug from the wall socket.
- ◆ When you need to turn off the projector to access internal parts, you must disconnect the power cable from the power supply. If the projector's power input is not accessible (for example, in ceiling-mounted installation mode), install a common disconnect device that is easily accessible in the fixed wiring.
- ◆ As with any bright source, do not stare into the direct beam, RG2 IEC 62471-5:2015.
- ◆ Do not observe the end of the laser beam while the device is running. Laser radiation is harmful to the human eye and may cause injury.

Important Safety Instructions

■ Preventing damages to the projector

- ◆ When using the projector, be sure to open the lens shutter or remove the lens cover.
- ◆ If there is any abnormality in the projector, unplug the power cable immediately. Do not continue to use the projector when it comes to smoke or makes strange noise or odor. In this case, immediately unplug the power cable and then contact the dealer.
- ◆ Keep the original shipping box and packing material. You can use it again when you need to transport the equipment. In order to maximize the protection of the equipment, re-package it in accordance with the original packaging at the factory.
- ◆ Before cleaning the device, unplug the power plug from the electrical outlet. Do not use cleaners or spray cleaners, but use a damp cloth for cleaning. Do not use irritating solvents, such as thinners, gasoline, or corrosive cleaners, as they can cause damage to the case. You can use a damp cloth and a mild detergent to remove stubborn stains.
- ◆ To ensure maximum optical performance and resolution, the projection lens is coated with a special anti-reflective coating, so avoid touching the lens. If you need to remove dust from the lens, use a soft cloth instead of a damp cloth, cleanser or thinner.
- ◆ Do not place this projector on an unstable vehicle, shelf or table. Because it will cause serious damage once the projector is dropped. Functions may be affected. Therefore, you should replace them. For example, damages such as cracks or deep scratches may occur.

■ Preventing fire

- ◆ The design and manufacture of the projector conforms to the most stringent safety requirements. Putting the flammable material near the projector may cause the material to ignite itself, causing a fire. Once fire occurs, be sure to use sand, CO² or dry powder fire extinguishers. Do not use water to fire when an electrical fire occurs.
- ◆ It is advisable to leave a "quarantine" around all the outer surfaces of the projector. No flammable material shall be placed in this area. Do not use any material to cover the projector or lens while the projector is working.
- ◆ Do not block the vents around the projector. Do not place paper or other objects in the range of 10 cm (4 inches) around the projector.
- ◆ The slots on the projector are used for ventilation and heat dissipation. To ensure reliable operation of the projector and to prevent it from overheating, do not block or cover these slots. The projector should not be attached to walls or other similar surfaces to prevent clogging of these slots. The projector should not be placed near the radiator or heat regulator. Unless the ventilation is good, the projector should not be placed in the embedded device or enclosed device.
- ◆ The projection room must be well ventilated or have a cooling device to avoid heat buildup. The hot air discharged from the projector must be able to be discharged to the outside of the building.
- ◆ If the projector is not used for a long period of time, remove the power cable.

Important Safety Instructions

■ About Repair

- ◆ Do not service this equipment privately because opening or removing the cover may expose you to high pressure and face an electric shock hazard.
- ◆ If you attempt to change the internal control functions set at the factory or to change other control settings that are not specifically addressed in this manual, it will cause permanent damage to the laser light source suite and warranty failure.
- ◆ When the following cases occur, unplug the device from the electrical outlet and allow qualified service personnel to service:
 - The power cable or power plug is damaged or worn.
 - Liquid is splashed into the equipment.
 - Equipment is in the rain or taking in water.
 - If the device is not operating properly in accordance with the operation instructions, adjust only the adjustment apparatuses mentioned in the operation instructions because improper adjustment of other apparatuses may cause damage.
 - The device falls to the ground or the case is damaged.
 - If the equipment performance has changed significantly, ask the service personnel for help.
- ◆ Replacement parts: When using replacement parts, ensure that the service technician uses approved replacement parts or approved replacement parts that are identical to the original parts. Unauthorized alternatives may result in deteriorated performance and stability, causing fire, electric shock, or other hazards. Unapproved alternatives may void the warranty.
- ◆ Safety check: When the projector is repaired, request the service technician to perform a safety check to ensure that the device has returned to the normal operation state.

Important Safety Instructions

FCC Statement

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

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

This product is not a general customer product and is limited to operate in a specific scene.

cTUVus



CONFORMS TO UL STD. 60950-1
CERTIFIED TO CSA STD.C22.2 NO. 60950-1

Overview

About This Manual

Repair: Only trained and qualified service technicians (understand laser safety, UV radiation, high voltage and connected circuits that create all the potential hazards) can open the projector for repair.

Disclaimer: Appotronics Corporation has endeavored to ensure the accuracy and reliability of the information provided in this document. However, as the product continues to improve, the information in this document is subject to change without notice. Appotronics Corporation is not responsible for omissions or inaccurate information. The updated version of this document is issued on a regular basis as needed. Please contact Appotronics Corporation to obtain the latest version.

Safety Warnings and Guides

■ Labels and Tags

Observe and follow all warnings and instructions marked on the projector.



Caution – As with any bright light source, do not stare into the beam, RG2 IEC 62471-5:2015



Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure



Laser-illuminated projectors – although generally Class 1 laser products during operation – usually contain Class 4 embedded lasers. Service shall be performed only by authorized, trained servicing personnel (IEC 60825-1).

■ General Warning Information



This symbol alerts users to notice important information about the operation and maintenance. Please read this information carefully to avoid problems.

Overview

Projector Features

Thank you for purchasing Appotronics laser projector. This product adopts a displacement lens and Appotronics new-generation laser light source technology. High-efficiency light machine and long-lifetime laser light source make the projector display pictures in a highlighted manner throughout the lifetime. It uses advanced laser fluorescence display technology, which achieves a great breakthrough on color performance. The color gamut range is beyond the REC.709 standard color gamut. In addition, ergonomic designs such as muting, lens centering, and rear ports provide a friendly experience.

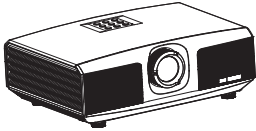
The projector has the following major features:

- ◆ Perfectly integrate the highlight and color;
- ◆ Adopt the long-lifetime laser light source;
- ◆ Adopt manually displaced lens;
- ◆ Adopt the TI DLP display technology;
- ◆ Adopt the digital stepless adjustable current technology, achieving adjustable segmented current;
- ◆ DLP-link 3D;
- ◆ Instant on or off;
- ◆ Multi-interface, dual-HDMI input;
- ◆ Industrial design, IP5X dustproof level of the optical receiver/transmitter and light source;
- ◆ Adopt the low power consumption design for the whole device;
- ◆ Support 360° free angle installation;

Overview

Packaging Overview

This product is delivered with all the items shown below. Check the packaging to ensure that the items are complete. If any items are missing, please contact the dealer immediately.



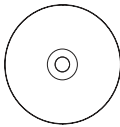
Projector



Power cable



HDMI cable



User Manual CD-ROM



Quick start guide



Remote control

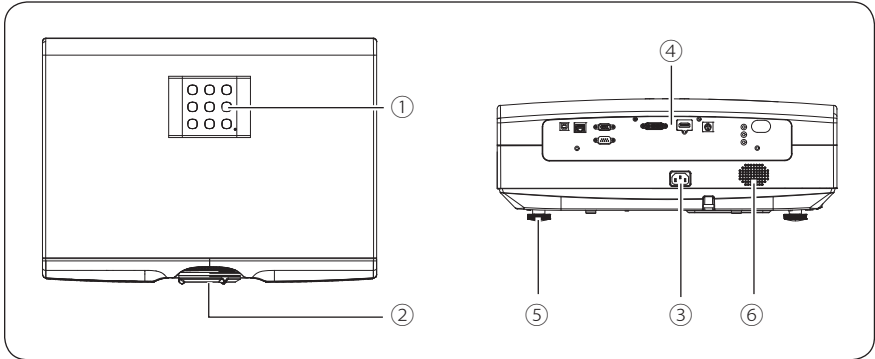
Caution

- Because of the differences in the application in each country (region), the products delivered to some regions may come with different accessories.

Overview

Projector Appearance

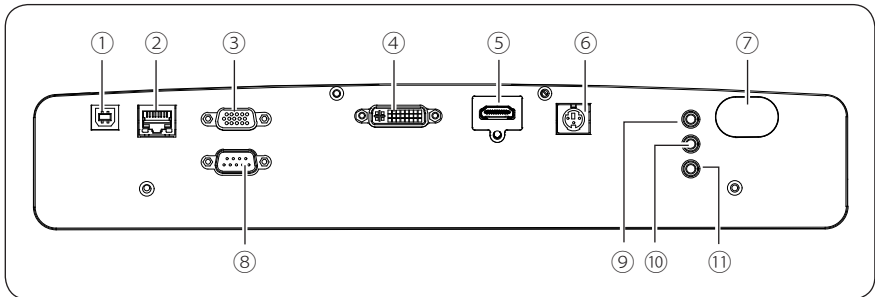
■ Main unit



- ① Control panel
- ② Projection lens
- ③ Power interface

- ④ Input and output panel
- ⑤ Adjustment feet
- ⑥ Horn hole

■ I/O panel

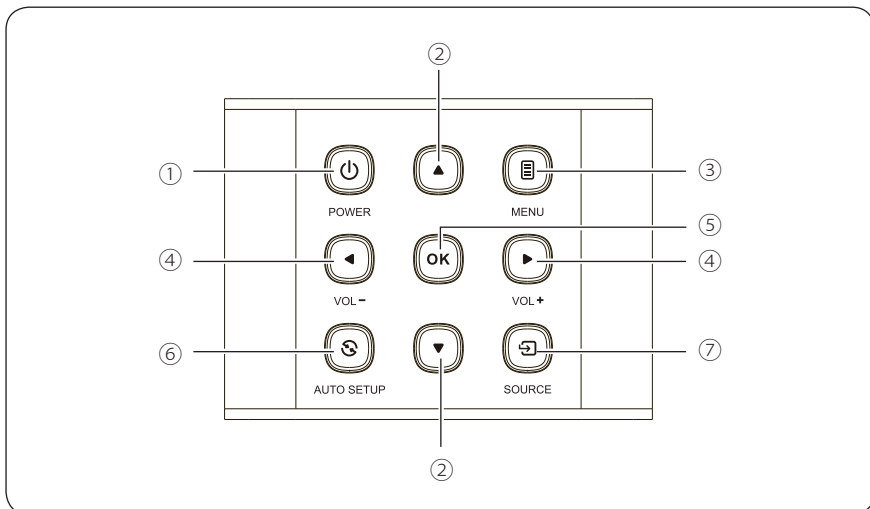


- ① USB port (Only used for debugging)
- ② RJ45 port
- ③ VGA IN port
- ④ DVI port
- ⑤ HDMI port
- ⑥ 3D OUT port

- ⑦ IR port
- ⑧ RS232 port
- ⑨ AUDIO IN port
- ⑩ AUDIO OUT port
- ⑪ IR WIRED port

Overview

■ Control panel



- ① POWER button (power-on/off)
Press the button to power on the device. In the power-on state, press the button twice to power off the device.
- ② Arrow keys (▲Up, ▼Down)
When the user menu is displayed, you can press ▲ or ▼ to select the desired menu item.
When no menu is displayed, you can use the key as a keystone correction shortcut.
- ③ MENU button
Access the screen display menu, exit the menu, and save the settings.
- ④ VOL +/-/arrow keys (◀ left, ▶ right)
 - Select items using "◀" or "▶".
 - Set the volume using "◀" or "▶".
- ⑤ OK button
Press to select or confirm the current value or item.
- ⑥ AUTO SETUP button
Press to automatically set the parameters.
- ⑦ SOURCE button
Select different signal sources.

Overview

Remote Control



1 POWER button

In standby mode, if you press this key, the device is powered on; in power-on mode, if you press this key, the screen prompts for the power-off operation. Press the power button to shut down the device.

2 MENU button

Press to display the main menu. If you press the key again, the main menu disappears or the system returns to the previous-layer menu.

3 EXIT button

Press to exit the settings.

Overview

4 ← ↑ ↓ → (arrow keys)

You can use ↑ and ↓ to scroll up and down, ← to select from the left or decrease the value, and → to select from the right or increase the value.

5 OK button

Press to select or confirm the current value or item.

6 INSTALLATION button

Press to select the projector installation mode. The project supports four projection modes: ceiling rear, ceiling front, table rear and table front.

7 PICTURE MODE button

Press to switch picture modes among standard, cinema, DICOM SIM, ECO and REC709.

8 KEYSTONE +/- button

Press "+" or "-" to carry out keystone correction.

9 VOLUME +/- button

Press "+" or "-" to adjust the volume.

10 Number keys

Press to enter the corresponding number.

11 SMART ECO button

Press to set the display mode to smart ECO mode.

12 SOURCE button

Press to set the input signal source to HDMI1, HDMI, DVI or VGA.

13 BLANK SCREEN button

Press to switch the picture to the blank screen.

14 ASPECT RATIO button

Set the aspect ratio to 4:3, 16:9, fill or native switching.

15 MIC button

It's disable for this model.

16 MUTE button

If you press the key, the mute symbol is displayed on the screen, and the device has no audio output; if you press the key again, the mute symbol disappears, and the audio output resumes.

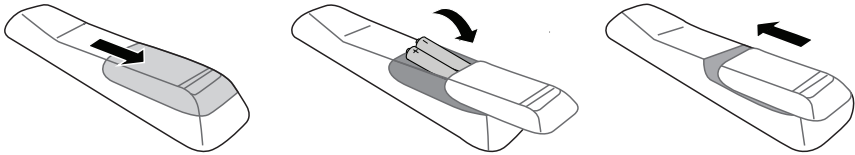
17 LANGUAGE button

Press to select the desired language.

Overview

Replacing the Battery of the Remote Control

- To open the battery cover, turn the remote control with the back facing up, and pull the battery cover as indicated by the arrowhead in the figure to remove the battery cover.
- Remove the old battery (if necessary) and install the two AAA batteries at the bottom of the battery compartment. The anode of the battery is towards the (+) direction, and the cathode is towards the (-) direction.
- Reattach the battery cover as indicated by the arrowhead in the figure.



Warning

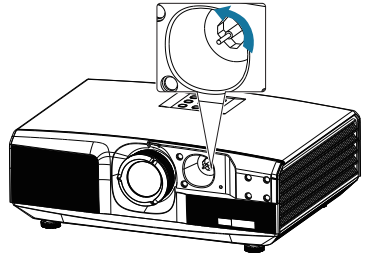
- Do not place the remote control and battery in high-temperature and high-humidity environments such as kitchens, bathrooms, saunas, solariums or closed cars.
- Use only the same or similar battery recommended by the battery manufacturer for the remote control.
- Deal with old and waste batteries according to the manufacturer's instructions and local environmental regulations.
- Do not throw the battery into the fire, since there may be a risk of explosion.
- If the battery is exhausted or the remote control is not used for a long period of time, remove the battery to avoid damage of liquid leakage to the remote control.

Overview

Lens shift

If the projector is not in the center of the screen, you can adjust the projected picture position by moving the lens shift lever within the lens shift range.

1. Rotate the lens shift lever (counterclockwise) in the direction indicated in the figure to release the lock.



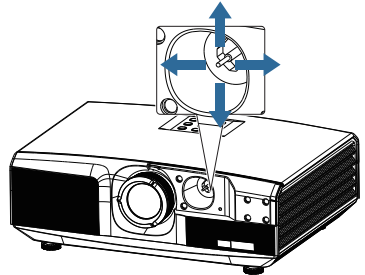
2. Adjust the projection position using the lens shift lever.

Horizontal shift

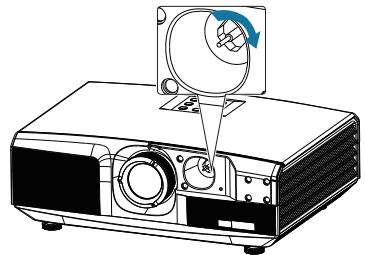
Adjust the projection by horizontally moving the lens shift lever according to the placement of the screen and the projector.

Vertical shift

Adjust the projection by vertically moving the lens shift lever according to the placement of the screen and the projector.



3. Rotate the lens shift lever clockwise to secure it.



Caution

- Do not forcibly shift the lens shift lever. Excessive force may cause the damages to the lever.

Installation

Projection mode

The projector supports four projection modes. You can install the projector according to the installation position. Before changing the projection mode, shut down the projector, change the projection mode, and then start up the projector. The preset projection mode is set to table front. You can change the projection mode in Menu > SETUP>INSTALLATION(TABLE FRONT/TABLE REAR/CEILING FRONT/CEILING REAR).

CEILING FRONT

Hang the projector on the wall or ceiling and project the picture from the front of the projection screen.

CEILING REAR

Hang the projector on the wall or ceiling and project the picture from the rear of the semi-transparent projection screen.

TABLE FRONT

The projection is in the front of the projection screen.

TABLE REAR

The projection is on the rear of the semi-transparent projection screen.

Warning

- Special installation methods are required to suspend the projector on the wall or ceiling. If not properly installed, the projector may fall and cause accidents and injuries.
- If the mounting point on the wall or ceiling hanger frame uses adhesive to prevent the screws from loosening, or the projector is lubricated with lubricating oil or other oil, the projector case may break, causing the projector to fall. This may cause the person standing under the hanger frame to be seriously injured and the projector may be damaged. When installing or adjusting the hanger frame, do not use adhesive to prevent the screws from loosening and do not use lubricating oil or other oil.
- Do not cover the projector's air inlet or air outlet. If any air outlet is covered, the internal temperature may rise and result in system shutdown.
- To ensure the performance and safety of the projector, the installation of the lifting bracket must be carried out by qualified technical personnel.

Installation

Adjusting the Projected Picture

■ Adjusting the protector position

To determine the position where the projector is placed, consider the size and shape of the screen, the location of the power outlet, and the distance between the projector and other devices. The following are general principles:

- ◆ Place the projector on a flat surface and keep a correct angle with the screen.
- ◆ Place the projector at an ideal location from the screen.
- ◆ The distance from the projector lens to the screen, the zoom settings, and the video format determine the size of the projected picture.

For the picture offset (shift) range of this projector, see the following table:

Resolution	H	V (V1/V2)
XGA	±35%	+50%/-35%
WXGA	±28%	+48%/-34%
1080P	±26%	+51%/-36%

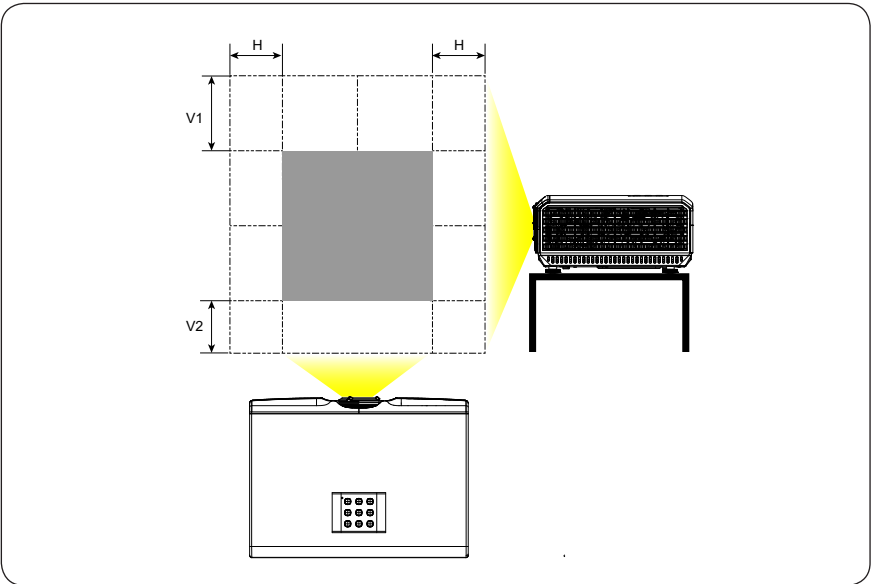
H: Horizontal offset range of the picture when the lens is centered.

V: Vertical offset range of the picture when the lens is centered.

⚠ Caution

- The values in the table above are approximate and may differ slightly from the actual values. The actual values shall apply.

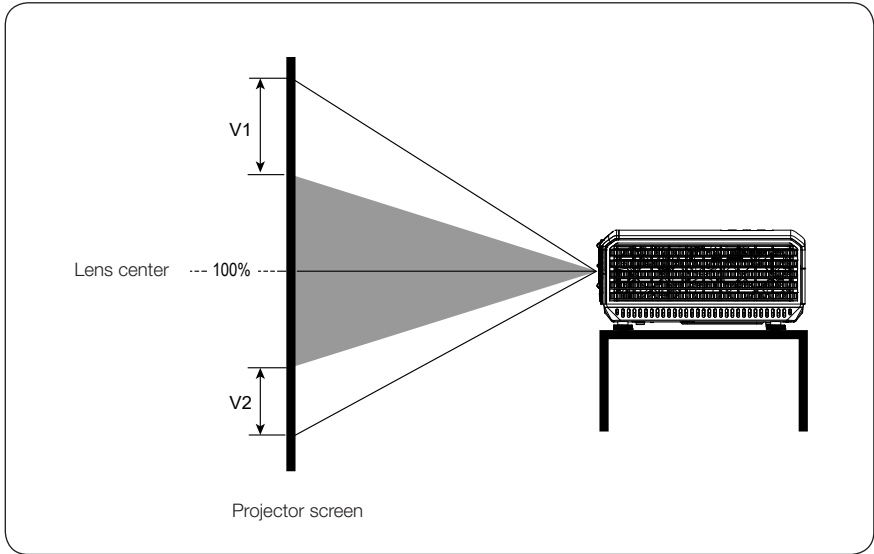
Schematic diagram of horizontal/vertical offset of the picture when the lens is centered (XGA):



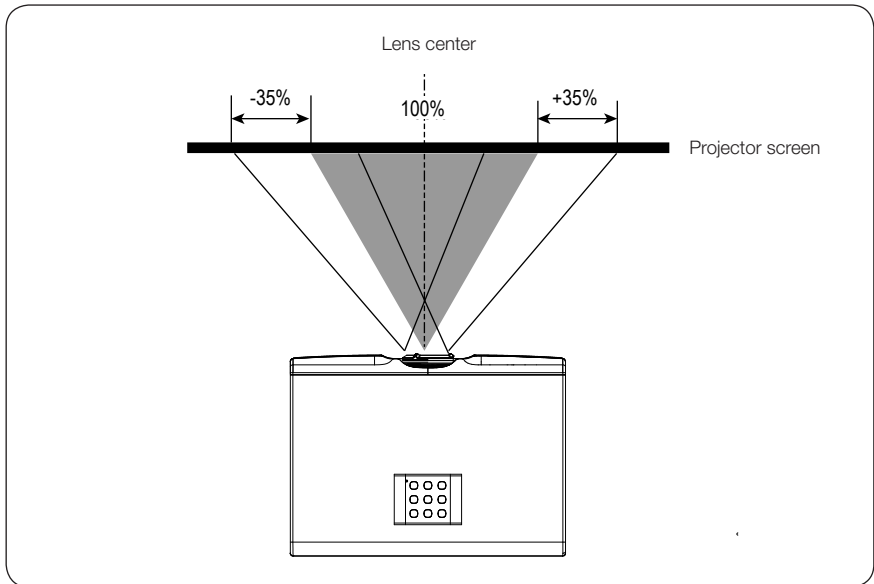
Installation

Schematic diagram of vertical offset when the lens is centered

The above table describes the vertical offset ranges (V1/V2) when the lens in different models.



Schematic diagram of horizontal offset when the lens is centered

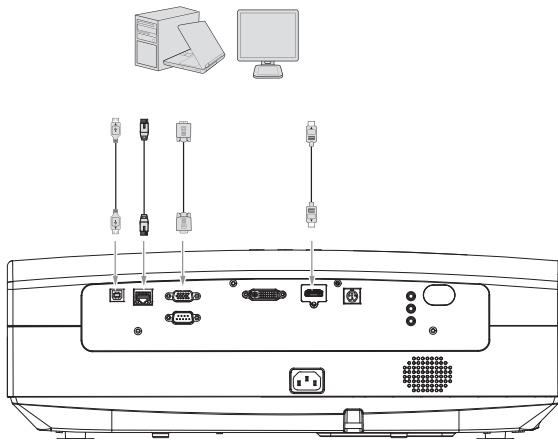


Device Connection

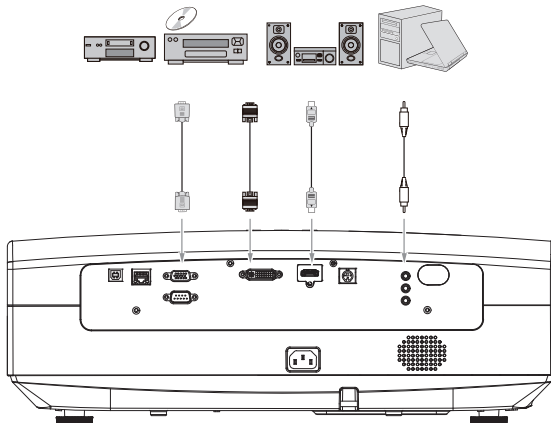
Before connecting the signal source to the projector, confirm the following:

- ◆ Disable all devices before any connection operation.
- ◆ Select the appropriate signal cable for each signal source.
- ◆ Ensure that the power cable is securely inserted.

Connecting the Projector to the PC or Laptop Computer



Connecting to the Audio or Video Device



Device Connection

Connecting the Projector to the Computer or Display

■ Connecting the project to the computer

The projector can be connected to a laptop computer or a desktop computer. If the projector needs to be connected to a computer in an earlier version, configure the corresponding adapter.

Connect the projector to the laptop computer or desktop computer.

- ◆ Connect one end of the VGA cable to the D-sub output port of the computer.
- ◆ Connect the other end of the VGA cable to the computer input port of the projector.

Caution

- The external video ports of many laptop computers connected to the projector are not enabled. Generally, you can enable or disable the external display by pressing Fn+F3 or CRT/LCD.
- On the laptop computer, find the CRT/LCD functional key or the functional key with the display symbol. Then, press Fn and the marked functional key simultaneously. For details, see the laptop computer instruction or the composite key description.

■ Connecting the projector to the display

To enable the display and screen to play the demo simultaneously, connect the computer output port of the projector to the external display using the VGA cable.

To connect the projector to the display, perform the following steps:

- ◆ Connect the projector to the computer.
- ◆ Connect one end of an appropriate VGA cable to the D-sub input port of the video display. If the display has the DVI input port, connect the DVI end of the VGA-DVI-A cable to the DVI input port of the video display.
- ◆ Connect the other end of the cable to the computer output port of the projector.

Device Connection

Connecting the Projector to the Video Source Device

You can connect the projector to a variety of video signal source devices with the following ports:

- ◆ HDMI
- ◆ Component video
- ◆ S-video
- ◆ Video (composite video)

You can connect the projector to the video signal source device using any of the preceding connection methods. The methods correspond to different video quality. The connection method depends on whether the projector and video source device have the matched terminals.

■ Best video quality

The optimal video connection method is using the HDMI port. You can enjoy the uncompressed digital video quality if the source device provides the HDMI port.

For details about how to connect the projector to the HDMI source device, see the chapter "Connecting the Projector to the HDMI Device".

■ Good video quality

The S-video connection method provides better analog video compared with the standard composite video. If the video source device provides both composite video and S-video output sources, you can select the S-video option. For details about how to connect the projector to the S-video source device, see the chapter "Connecting the Projector to the S-video Device".

■ Normal video quality

The S-video connection method provides better analog video compared with the standard composite video. If the video source device provides both composite video and S-video output sources, you can select the S-video option. For details about how to connect the projector to the S-video source device, see the chapter "Connecting the Projector to the S-video Device".

■ Worst video quality

The composite video is a type of analog video. Although the quality is not the best, it is acceptable. The video quality of this connection method is the worst compared with the preceding available connection methods. For details about how to connect the projector to the composite video source device, see the chapter "Connecting the Projector to the Composite Video Source Device".

Device Connection

Connecting the Projector to the Audio Source

The projector has a mono speaker designed to provide basic audio features, with commercial data demonstrations. They are not dedicated to stereo audio reproduction and are intended for home cinemas. Any stereo audio input (if provided) is mixed through the projector speaker into a common mono audio output.

The following table shows the sources of the sound when the projector is connected to different signal sources.

Input Signal Source	Computer Input	S-video or Video Input
The projector can play the sound from the following sources.	Computer audio input	AV audio input

Connecting the HDMI Device

Check the video source device to determine whether it has an unused HDMI output port.

If available, you can continue to use the program.

If not, you need to reevaluate the methods that can be used to connect to the projector.

Connecting the projector to the device with the HDMI signal source

- Connect one end of the HDMI cable (not provided with the projector) to the HDMI output port of the HDMI signal source.
- Connect the other end of the HDMI cable to the HDMI1 or HDMI2 port of the projector. You can select the display channel using the remote control or the corresponding keys.

Device Connection

Connecting to the Component Video Device

Check the video source device to determine whether it has an unused component video output port. If available, you can continue to use the program. If not, you need to reevaluate the methods that can be used to connect to the projector.

Connecting the projector to the component video source

- ◆ Connect the end of the component video cable (not delivered with the projector) with three RCA connectors to the component video output port of the video source device, and ensure that the color of the connectors maps the color of the ports (green corresponding to green, blue corresponding to blue, and red corresponding to red).
- ◆ Connect the other end of the component video cable to the color difference component port. Ensure that the color of the connectors maps the color of the ports (green corresponding to green, blue corresponding to blue, and red corresponding to red).

Connecting to the S-video Device

Check the video source device to determine whether it has an unused S-video output port. If available, you can continue to use the program. If not, you need to reevaluate the methods that can be used to connect to the projector.

Connecting the projector to the S-video source device

- ◆ Connect one end of the S-video cable (not provided with the projector) to the HDMI output port of the S-video signal source.
- ◆ Connect the other end of the S-video cable to the S-video input port of the projector.

Connecting to the Composite Video Device

Check the video source device to determine whether it has an unused composite output port. If available, you can continue to use the program. If not, you need to reevaluate the methods that can be used to connect to the projector.

Connecting the projector to the composite video source

- ◆ Connect one end of the composite cable (not provided with the projector) to the HDMI output port of the composite signal source.
- ◆ Connect the other end of the composite cable to the composite input port of the projector.

Operation

Powering On the Projector

- Insert the power cable to the projector and the wall socket. Switch on the wall socket (if available). Check whether the power indicator on the projector is on red.
- Press the power button on the projector or remote control to power on the projector. After the projector is on, the indicator is steady on green. If necessary, rotate the focusing ring to adjust the picture definition.
- If the projector is initially started up, select the language from the menu as prompted on the screen.
- The projector starts to search for input signals. You can also select desired input signals by pressing the signal source button on the projector or remote control.

Menus

The following figure shows the level-1 menu, including display, picture, source, setup and advance options. You can move the cursor among these options. The menu supports automatic preview of sub-menus.



Operation

DISPLAY

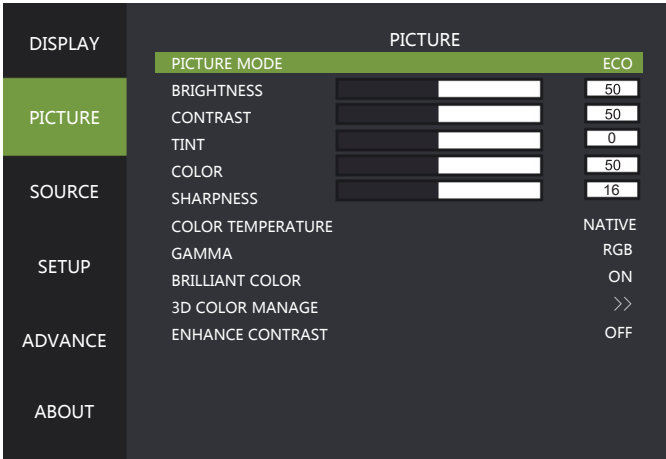


DISPLAY	
Function	Attribute Value
ASPECT RATIO	FILL, 4:3, 16:9, NATIVE
KEYSTONE ADJUST	-40~40
DIGITAL ZOOM	>>
H-POSITION	-5~5
V-POSITION	-5~5
PHASE ADJUST	0~31
CLOCK	-5~5
ASPECT CROP	OFF, LEFT-TOP, LEFT-BELOW, RIGHT-BELOW
AUTO KEYSTONE	ON/OFF
AUTO REVERSE	ON/OFF

- ◆ ASPECT RATIO indicates that the panel resolution is displayed according to the DMD.
- ◆ KEYSTONE ADJUST is performed manually instead of automatically.
- ◆ V-POSITION: Depend on the input signal. Its value is uncertain, but it can fine tune the picture display position.
- ◆ PHASE ADJUST: When the input signal jitter on the screen jitter, adjust the value to achieve the appropriate state.
- ◆ ASPECT CROP: Select the screen position (OFF, LEFT-TOP, LEFT-BELOW, RIGHT-BELOW) of the current projector in the cropping module.
- ◆ AUTO KEYSTONE: Automatically perform keystone correction according to the screen position.
- ◆ AUTO REVERSE: The projector can automatically flip the screen in the ceiling-mounted state, without separate boot settings.

Operation

PICTURE

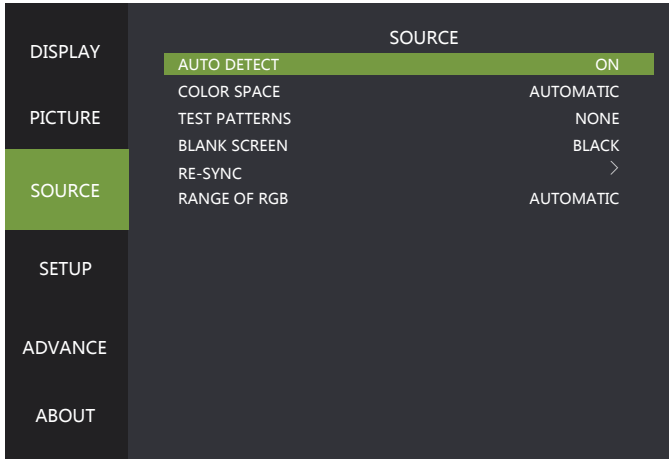


PICTURE	
Function	Attribute Value
PICTURE MODE	STANDARD, CINEMA, ECO, DICOM SIM, REC709
BRIGHTNESS	0~100
CONTRAST	0~100
TINT	-30~30
COLOR	0~100
SHARPNESS	0~31
COLOR TEMPERATURE	WARM, COOL, NATIVE
GAMMA	CUBIC/Srgb2.2, RGB, FILM, VIDEO, PHOTOGRAPHIC and LINEAR
BRILLIANT COLOR	ON/OFF
3D COLOR MANAGE	>>
ENHANCE CONTRAST	ON/OFF

- ◆ PICTURE MODE is associated with the brightness, contrast, tint, color, sharpness, color temperature, gamma, brilliant color, and 3D color management. The tint is adjustable only when the signal source is video.
- ◆ >> indicates that you can go to the sub-menu (the same below).
- ◆ 3D COLOR MANAGE: You can adjust the color coordinates and brightness of monochromatic light. This option is applicable to the advanced user group. Common users are not recommended to change the setting of this option.
- ◆ ENHANCE CONTRAST: When this function is enabled, the system improves contrast of the full black and full white test screens.

Operation

SOURCE

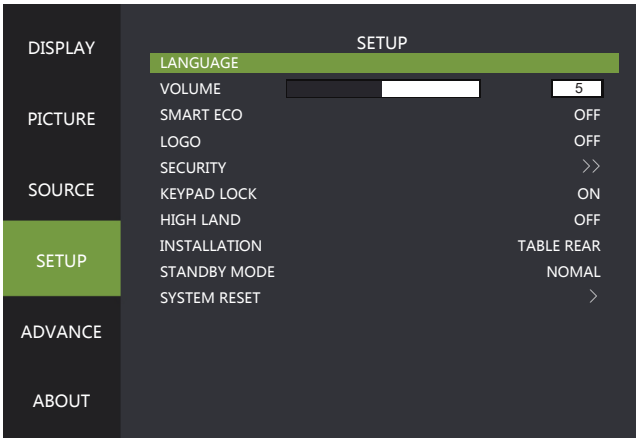


SOURCE	
Function	Attribute Value
AUTO DETECT	ON/OFF
COLOR SPACE	AUTOMATIC, RGB, YPbPr, and YCbCr
TEST PATTERNS	NONE, RGB RAMPS, COLOR BARS, STEP BARS, CHECKERBOARD, GRID, HORIZONTAL LINES, VERTICAL LINES, DIAGONAL LINES, HORIZONTAL RAMP, VERTICAL RAMP
BLANK SCREEN	BLACK, BLUE, GRAY, RED, GREEN, YELLOW, GYAN, MAGENTA, WHITE
RE-SYNC	>
RANGE OF RGB	AUTOMATIC, 0-255, 16-235

- ◆ Automatic detection indicates that the system automatically detects signal source input within the supported signal source list in a circular manner until the input is detected.
- ◆ The test chart and blank screen use the pre-stored pictures and colors to facilitate installation and commissioning.
- ◆ Automatic setting indicates that the system re-lock the signal source.
- ◆ RGB range refers to the range of RGB signal at the time of signal source input.

Operation

SETUP



SETUP	
Function	Attribute Value
LANGUAGE	>>
VOLUME	0~10
SMART ECO	ON/OFF
LOGO	ON/OFF
SECURITY	>>
KEYPAD LOCK	ON/OFF
HIGH LAND	ON/OFF
INSTALLATION	TABLE FRONT, TABLE REAR, CEILING FRONT, CEILING REAR
STANDBY MODE	ULTRALOW, NORMAL, POWER DIRECT
SYSTEM RESET	>

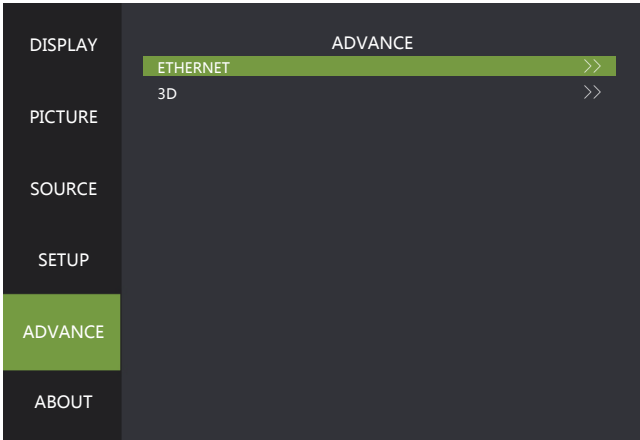
AUTHORIZATION MANAGE	
AUTHORIZATION	ON/OFF
PASSWORD PRESET	8 digits

Operation

- ◆ LANGUAGE refers the language displayed on the menu. The projector supports English, French, German, Simplified Chinese, Traditional Chinese, Japanese, Korean.
- ◆ SMART ECO: When this function is enabled, the system automatically enters the power-saving mode if there is no input and operation in five consecutive minutes. In this mode, the current is about 80% of the normal mode, in order to achieve power-saving purposes; if there is no input in 10 consecutive minutes, the system changes to the light source disabled mode; if there is no input in 15 consecutive minutes, the system changes to the standby mode. When the ambient temperature is higher than 35°C, the system automatically enters the power-saving mode to allow the projector to work in even more harsh environments.
- ◆ LOGO refers to the logo of the brander displayed in 10s after the projector is powered on.
- ◆ SECURITY: The system allows you to set the power-on password for the projector to prevent unauthorized users from using the projector. The password contains 8 Arabic digits and does not support other characters. If you forget your password, please contact customer service personnel.
- ◆ KEYPAD LOCK: After the key lock is enabled, the projector's keypad will be invalid, and you can control the projector only through the remote control or host computer.
- ◆ HIGH LAND: When using the projector in a high-altitude area, enable the high altitude mode. Otherwise, the project lifetime may be affected.
- ◆ STANDBY MODE supports two standby modes, namely, normal standby mode and ultra-low power standby mode. In normal standby mode, the power consumption is higher than 1 W. The LAN module can still work, and the network can be waken up. In ultra-low power standby mode, the power consumption is lower than 0.5 W. The LAN module is powered off, and the network cannot be waken up.
- ◆ FILTER TIME: When the FILTER TIME function is enabled, the projector records the cumulative time for using the filter.
- ◆ FILTER TIME CLEAR: clear the filter used time.

Operation

ADVANCE



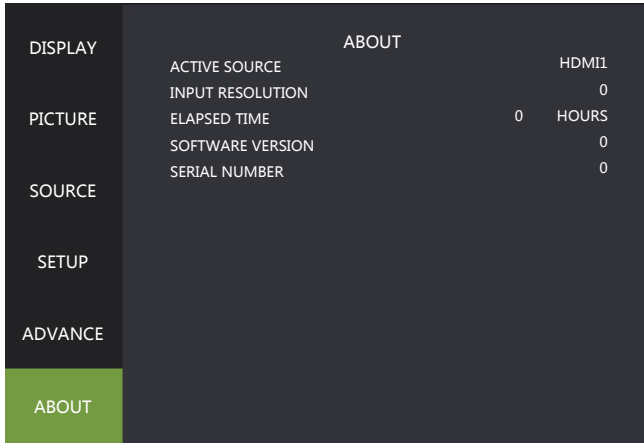
ADVANCE	
Function	Attribute Value
ETHERNET	>>
3D	>>

ETHERNET SETTING				
IP ADDRESS	0	0	0	0
SUBNET MASK	0	0	0	0
GATEWAY	0	0	0	0
DNS	0	0	0	0
DHCP	OFF			

3D SETTING		
FORMAT	VSYNC_SEPARATED_HALF	VSYNC_SEPARATED_FULL
	VERT_PACKCD_HALF	VERT_PACKCD_FULL
	HORIZ_PACKED_HALF	HORIZ_PACKED_FULL

Operation

ABOUT



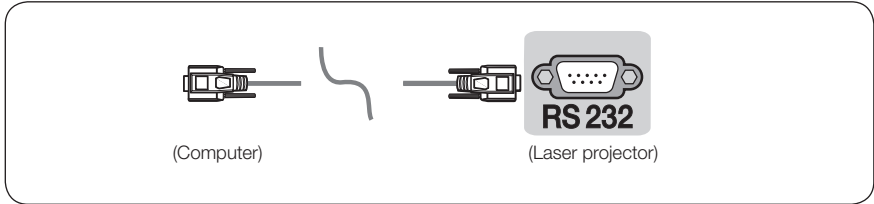
ABOUT	
Function	Attribute Value
ACTIVE SOURCE	>>
INPUT RESOLUTION	>
ELAPSED TIME	0 HOURS
SOFTWARE VERSION	Vxx
SERIAL NUMBER	APPO1234567

- ◆ ACTIVE SOURCE: When the external signal is input, the current signal channel is displayed; when there is no signal input, the screen displays no signal.
- ◆ INPUT RESOLUTION: Identify the external signal resolution.
- ◆ ELAPSED TIME: Indicate the accumulative time since the light source is on.
- ◆ SOFTWARE VERSION: Display the version number of the current software.
- ◆ SERIAL NUMBER: Indicates the SN used to identify the device.

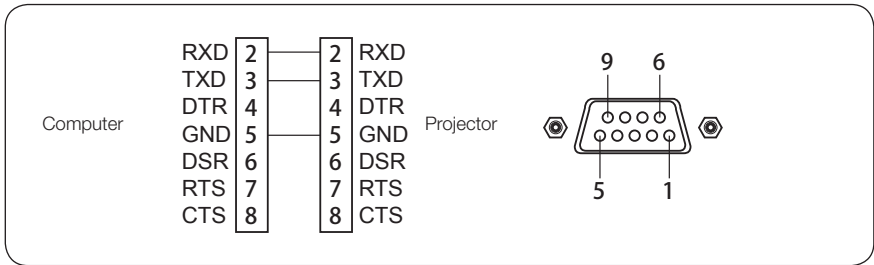
Serial Port

Serial Port

The serial port on the interface board of the projector complies with the RS-232 interface specifications. Therefore, you can control the projector through the personal computer connected to this port.



RS-232 connection diagram



*Pin 1 and pin 2 are not connected.

Communication device

Communication settings	
Communication type	Serial port RS232
Baud rate	115200
Parity bit	NONE
Data bit	8 bit
Stop bit	1 bit

Serial port

Reference Command List

Control Content	Description	Hexadecimal Control Code
STARTUP		EB 90 00 0C 00 00 08 02 00 01 01 93
SHUTDOWN		EB 90 00 0C 00 00 08 01 00 01 00 91
SOURCE	HDMI	EB 90 00 0C 00 00 08 01 00 02 01 93
	DVI	EB 90 00 0C 00 00 08 01 00 02 02 94
	VGA	EB 90 00 0C 00 00 08 01 00 02 03 95
SOUND	ON	EB 90 00 0C 00 00 08 01 00 03 00 93
	OFF	EB 90 00 0C 00 00 08 01 00 03 01 94
VOLUME SETTINGS	0	EB 90 00 0C 00 00 08 01 00 04 00 94
	1	EB 90 00 0C 00 00 08 01 00 04 01 95
	2	EB 90 00 0C 00 00 08 01 00 04 02 96
	3	EB 90 00 0C 00 00 08 01 00 04 03 97
	4	EB 90 00 0C 00 00 08 01 00 04 04 98
	5	EB 90 00 0C 00 00 08 01 00 04 05 99
	6	EB 90 00 0C 00 00 08 01 00 04 06 9A
	7	EB 90 00 0C 00 00 08 01 00 04 07 9B
	8	EB 90 00 0C 00 00 08 01 00 04 08 9C
	9	EB 90 00 0C 00 00 08 01 00 04 09 9D
VOLUME	+	EB 90 00 0C 00 00 08 01 00 05 01 96
	-	EB 90 00 0C 00 00 08 01 00 05 00 95
PICTURE MODE	STANDARD	EB 90 00 0C 00 00 08 01 00 07 01 98
	CINEMA	EB 90 00 0C 00 00 08 01 00 07 02 99
	DEMO	EB 90 00 0C 00 00 08 01 00 07 03 9A
	ECO	EB 90 00 0C 00 00 08 01 00 07 04 9B
	DICOM SIM	EB 90 00 0C 00 00 08 01 00 07 05 9C
	REC709	EB 90 00 0C 00 00 08 01 00 07 06 9D
ASPECT RATIO	FILL	EB 90 00 0C 00 00 08 01 00 08 01 99
	NATIVE	EB 90 00 0C 00 00 08 01 00 08 02 9A
	4:3	EB 90 00 0C 00 00 08 01 00 08 03 9B
	16:9	EB 90 00 0C 00 00 08 01 00 08 04 9C
3D SETTING	OFF	EB 90 00 0C 00 00 08 01 00 09 00 99
	VSYNC_SEPARATED_HALF	EB 90 00 0C 00 00 08 01 00 09 01 9A
	VSYNC_SEPARATED_FULL	EB 90 00 0C 00 00 08 01 00 09 02 9B
	VERT_PACKED_HALF	EB 90 00 0C 00 00 08 01 00 09 03 9C
	VERT_PACKED_FULL	EB 90 00 0C 00 00 08 01 00 09 04 9D
	HORIZ_PACKED_HALF	EB 90 00 0C 00 00 08 01 00 09 05 9E
	HORIZ_PACKED_FULL	EB 90 00 0C 00 00 08 01 00 09 06 9F
SMART ECA	ON	EB 90 00 0C 00 00 08 01 00 0A 01 9B
	OFF	EB 90 00 0C 00 00 08 01 00 0A 00 9A
KEYPAD LOCK	ON	EB 90 00 0C 00 00 08 01 00 0E 01 9F
	OFF	EB 90 00 0C 00 00 08 01 00 0E 00 9E

Maintenance

Projector Maintenance

The projector needs to be maintained. You need to regularly clean the lens.

You can power on the projector only after the surface water is dried if you clean the lens or enclosure.

Do not disassemble any parts of the projector. To replace the parts, please contact the dealer.

■ Cleaning the lens

You can clean the lens when you find that the lens surface is stained or dusty.

- ◆ Use a compressed air tank to remove dust.
- ◆ If there is dust or stain, gently wipe the lens surface using the lens paper or damp cloth with some cleaning agent.

Caution

- Do not rub the lens with abrasive materials.

■ Cleaning the projector enclosure

- ◆ To remove dirt or dust, wipe the enclosure with a soft, lint-free cloth.
- ◆ To remove strong dirt or spots, wet the soft cloth using water and neutral pH detergent, and then wipe the enclosure.

Caution

- Do not use wax, alcohol, benzene, thinner, or other chemical cleaners because these substances can damage the enclosure.

■ Storing the projector

If you need to store the projector for a long period of time, follow the instructions below:

- ◆ Ensure that the temperature and humidity of the storage area are within the recommended range for the projector.
- ◆ Retract the adjustment feet.
- ◆ Remove the battery from the remote control.
- ◆ Use the projector's original packaging or equivalent material to package the projector.

■ Transporting the projector

It is recommended to use the original packaging or equivalent material when transporting the projector.

Troubleshooting

- The projector fails to power on.

Cause	Solution
The power cable supplies no power.	Insert one end of the power cable to the AC port on the projector, and insert the other end to the electrical outlet. If the electrical outlet has a switch, ensure that the switch is turned on.

- No picture

Cause	Solution
The video signal source is not enabled or is incorrectly connected.	Enable the video signal source and check whether the signal cable is properly connected.
The projector and the input signal device are not properly connected.	Check the connection.
The input signal is not correctly selected.	Select the correct input signal source using the signal source key on the projector or remote control.

- The picture is fuzzy.

Cause	Solution
The projector does not accurately align with the screen.	Adjust the projection angle and direction. If necessary, adjust the projector's height or distance.

- The picture is deformed.

Cause	Solution
The screen is not smooth.	Professional screens such as digital board are recommended.

- The remote control fails.

Cause	Solution
The battery level is low.	Replace the battery.
There are obstacles between the remote control and the projector.	Move the obstacles.
The distance to the projector is too far.	The distance to the projector should be no longer than 5 m (16 inches).

Troubleshooting

Indicator

Light		State and Indication
Red	Green	
Course light		
Off	Off	Power-off
On	Off	Standby mode
Off	On	Power-on state
Blinking	Off	Protection state upon safety switch anomalies
Off	Blinking	Protection state upon running anomalies
System protection		
Off	Blinking	[Safety protection]: When the projector is powered on, safety protection is triggered when the top cover is opened, regardless of whether the projector is in the standby state or the power-on state. After safety protection is triggered, the red LED indicator on the rear panel blinks.
Off	Blinking twice - pause - blinking for five times	[Light source protection]: Light source protection is triggered when the light source temperature NTC is no lower than 79°C or is higher than 0°C for 120s. If the temperature after the startup is 0°C and the following software considers that the NTC data collection is abnormal, that is, the light source temperature NTC is no lower than 79°C or is higher than 0°C, the green LED indicator blinks for 2+5s (the former is over-temperature and the latter is under-temperature).
Off	Blinking twice - pause - blinking for six times	[Temperature protection]: Temperature protection is triggered when the ambient temperature NTC is lower than 0°C or is higher than 40°C for 120s. The green LED indicator blinks for 2+6s.
Off	Blinking twice - pause - blinking for three times	[Color wheel protection]: During the startup, to enable the laser, the color wheel speed must reach 90-150 Hz. During normal operation, the color wheel speed is considered abnormal if it is lower than 90 Hz or higher than 150 Hz. The protection reaction interval triggered by the color wheel anomaly is shorter than 1s. That is, shutdown protection is enabled when the color wheel speed deviates from 90-150 Hz for 1s. The green LED indicator blinks for 2+3s.
Off	Blinking twice - pause - blinking for four times	[Fan protection]: After the startup, if any fan stops working for 60s, fan protection is triggered. The green LED indicator blinks for 2+4s.



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