Video Wall Controller

Quick Start Guide

Legal Information

About this Document

- This Document includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only.
- The information contained in the Document is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of the Document at the Hikvision website (***https://www.hikvision.com***). Unless otherwise agreed, Hangzhou Hikvision Digital Technology Co., Ltd. or its affiliates (hereinafter referred to as "Hikvision") makes no warranties, express or implied.
- Please use the Document with the guidance and assistance of professionals trained in supporting the Product.

About this Product

This product can only enjoy the after-sales service support in the country or region where the purchase is made.

Acknowledgment of Intellectual Property Rights

- Hikvision owns the copyrights and/or patents related to the technology embodied in the Products described in this Document, which may include licenses obtained from third parties.
- Any part of the Document, including text, pictures, graphics, etc., belongs to Hikvision. No part of this Document may be excerpted, copied, translated, or modified in whole or in part by any means without written permission.
- HIKVISION and other Hikvision's trademarks and logos are the properties of Hikvision in various jurisdictions.
- Other trademarks and logos mentioned are the properties of their respective owners.
- HDMI The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries.

LEGAL DISCLAIMER

- TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, THIS DOCUMENT AND THE PRODUCT DESCRIBED, WITH ITS HARDWARE, SOFTWARE AND FIRMWARE, ARE PROVIDED "AS IS" AND "WITH ALL FAULTS AND ERRORS". HIKVISION MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY, SATISFACTORY QUALITY, OR FITNESS FOR A PARTICULAR PURPOSE. THE USE OF THE PRODUCT BY YOU IS AT YOUR OWN RISK. IN NO EVENT WILL HIKVISION BE LIABLE TO YOU FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES, INCLUDING, AMONG OTHERS, DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, OR LOSS OF DATA, CORRUPTION OF SYSTEMS, OR LOSS OF DOCUMENTATION, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY, OR OTHERWISE, IN CONNECTION WITH THE USE OF THE PRODUCT, EVEN IF HIKVISION HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSS.
- YOU ACKNOWLEDGE THAT THE NATURE OF THE INTERNET PROVIDES FOR INHERENT SECURITY RISKS, AND

HIKVISION SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER-ATTACK, HACKER ATTACK, VIRUS INFECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, HIKVISION WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

- YOU AGREE TO USE THIS PRODUCT IN COMPLIANCE WITH ALL APPLICABLE LAWS, AND YOU ARE SOLELY RESPONSIBLE FOR ENSURING THAT YOUR USE CONFORMS TO THE APPLICABLE LAW. ESPECIALLY, YOU ARE RESPONSIBLE, FOR USING THIS PRODUCT IN A MANNER THAT DOES NOT INFRINGE ON THE RIGHTS OF THIRD PARTIES, INCLUDING WITHOUT LIMITATION, RIGHTS OF PUBLICITY, INTELLECTUAL PROPERTY RIGHTS, OR DATA PROTECTION AND OTHER PRIVACY RIGHTS. YOU SHALL NOT USE THIS PRODUCT FOR ANY PROHIBITED END-USES, INCLUDING THE DEVELOPMENT OR PRODUCTION OF WEAPONS OF MASS DESTRUCTION, THE DEVELOPMENT OR PRODUCTION OF CHEMICAL OR BIOLOGICAL WEAPONS, ANY ACTIVITIES IN THE CONTEXT RELATED TO ANY NUCLEAR EXPLOSIVE OR UNSAFE NUCLEAR FUEL-CYCLE, OR IN SUPPORT OF HUMAN RIGHTS ABUSES.
- IN THE EVENT OF ANY CONFLICTS BETWEEN THIS DOCUMENT AND THE APPLICABLE LAW, THE LATTER PREVAILS.

Preface

Applicable Models

This manual is applicable to the DS-C60S series video wall controller.

Default Parameters

Type	Default Parameter
Device	• Login user name: admin • IP address: 192.0.0.64
SSH connection	

Caution

To improve system security, it is highly recommended to change password regularly. In order to protect your privacy and corporate data and avoid network security issues, it is recommended to set strong password that meets security requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
Note	Provides additional information to emphasize or supplement important points of the main text.
Caution	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions

Caution

- The device must be connected to an earthed mains socket-outlet.
- The socket-outlet shall be installed near the device and shall be easily accessible.
- Do not touch the bare components (such as the metal contacts of the inlets) and wait for at least 5 minutes, since electricity may still exist after the device is powered off.
- Never place the device in an unstable location. The device may fall, causing serious personal injury or death.
- This device is not suitable for use in locations where children are likely to be present.
-  CAUTION: Risk of explosion if the battery is replaced by an incorrect type.
- Improper replacement of the battery with an incorrect type may defeat a safeguard (for example, in the case of some lithium battery types).
- Do not dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
- Do not leave the battery in an extremely high temperature surrounding environment, which may result in an explosion or the leakage of flammable liquid or gas.
- Do not subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
- Dispose of used batteries according to the instructions.
- Keep body parts away from fan blades. Disconnect the power source during servicing.

Note

- This device is suitable for use in equipment room only.
- Make sure that the power has been disconnected before you wire, install, or disassemble the device.
- The device shall not be exposed to water dripping or splashing, and no objects filled with liquids, such as vases, shall be placed on the device.
- No naked flame sources, such as lighted candles, should be placed on the device.
- If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.
- Install the device according to the instructions in Quick Start Guide.
- To prevent injury, this device must be securely attached to the installation surface in accordance with the installation instructions.
- The ventilation should not be impeded by covering the ventilation openings with items, such as newspapers, table-cloths, curtains. The openings shall never be blocked by placing the device on a bed, sofa, rug, or other similar surface.

TABLE OF CONTENTS

Chapter 1 Introduction 1
1.1 Overview 1
1.2 Appearance 1
1.2.1 Host System 1
1.2.2 Service Board 3
Chapter 2 Installation 7
2.1 Safety Precautions 7
2.2 Open Package and Check Items 8
2.3 Install a Service Board 9
2.4 Install the Device in the Rack 11
2.5 Connect the Grounding Cable 12
2.6 Connect the Network Cable 14
2.7 Connect the Power Cord 14
Chapter 3 Configuration 15

Chapter 1 Introduction

1.1 Overview

The video wall controller (hereinafter referred as the device) is the core control device of the screen splicing control system. As a new-generation FPGA-based pure hardware image processing device, it adopts the structure of main control board and service boards to provide the following advantages:

- Supports the video input and video output via various ports.
- Supports the network encoding and real-time preview of signal sources.
- Supports the decoding and output of various network signal sources.
- Supports the high-definition (HD) video splicing and fusion.
- Supports the window splicing, roaming window, and other operations.
- Supports the management on users, network, operation, alarm and logs.

1.2 Appearance

1.2.1 Host System

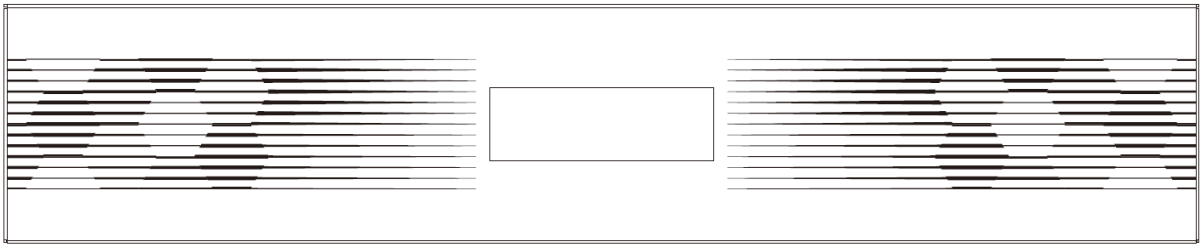

Figure 1-1 Front View of Device

The LCD panel on the device front panel displays IP address, CPU usage, software version, device model, fan monitoring information (status, gear, and speed), and sub-board information (slot and temperature).

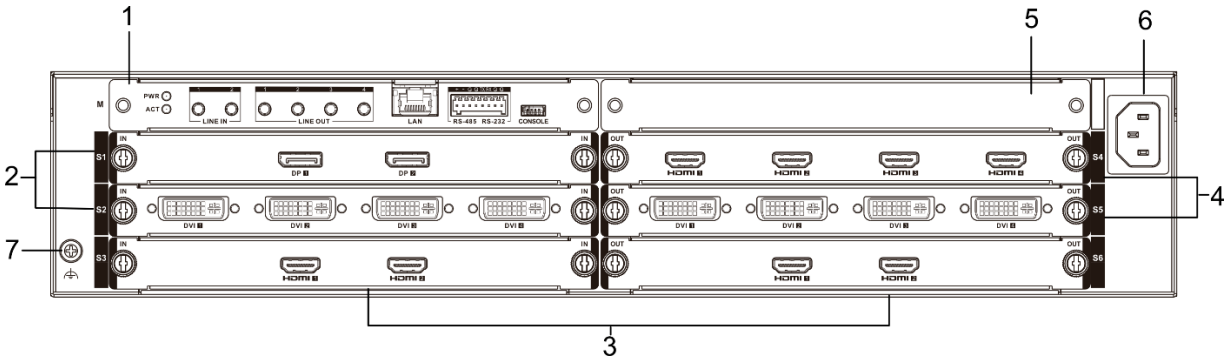

Figure 1-2 Rear View of Device

No.	Name	Description
1	Main control board slot (M)	Insert the main control board.
2	Service board slot (S1 and S2)	Supports the input boards and decoding boards.
3	Service board slot (S3 and S6)	Supports all service boards.
4	Service board slot (S4 and S5)	Supports the output boards, preview boards, and LED controller boards. **Note** When an LED controller board is inserted into the S4 slot, remove the baffle from the empty slot.
5	Empty slot	Keep the baffle in the slot.
6	Power socket	Connects to the power cord.
7	Grounding point	Connects to the grounding cable.

Main Control Board

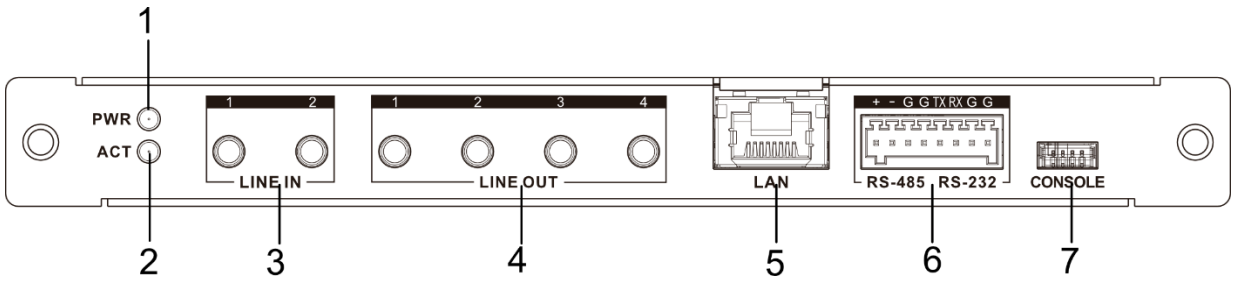

Figure 1-3 Front View of Main Control Board

No.	Name	Description
1	PWR LED	Steady green: all boards are powered on normally.
2	ACT LED	Flashing green: the board runs normally.
3	Audio input port (LINE IN)	Connects to the active audio, such as active microphone.
4	Audio output port (LINE OUT)	Connects to the audio playback device with the amplifier.
5	Gigabit Ethernet port (LAN)	Connects to the network cable.

No.	Name	Description
6	RS-485/RS-232 port	Insert the green Phoenix contact into the port, and then use cables to connect other external devices that support RS-485 or RS-232 protocol. ● +: Connect to the RS-485 port of an external device. ● -: Connect to the RS-485 port of an external device. ● G: Connect to the grounding cable of an external device. ● TX: Connect to the RS-232 port of an external device. ● RX: Connect to the RS-232 port of an external device.
7	Console port	Connects to the serial port cable for device debugging, parameter configuration, and etc.

1.2.2 Service Board

The host system uses different service boards to realize different functions. The service boards are hot swappable.

Input Board

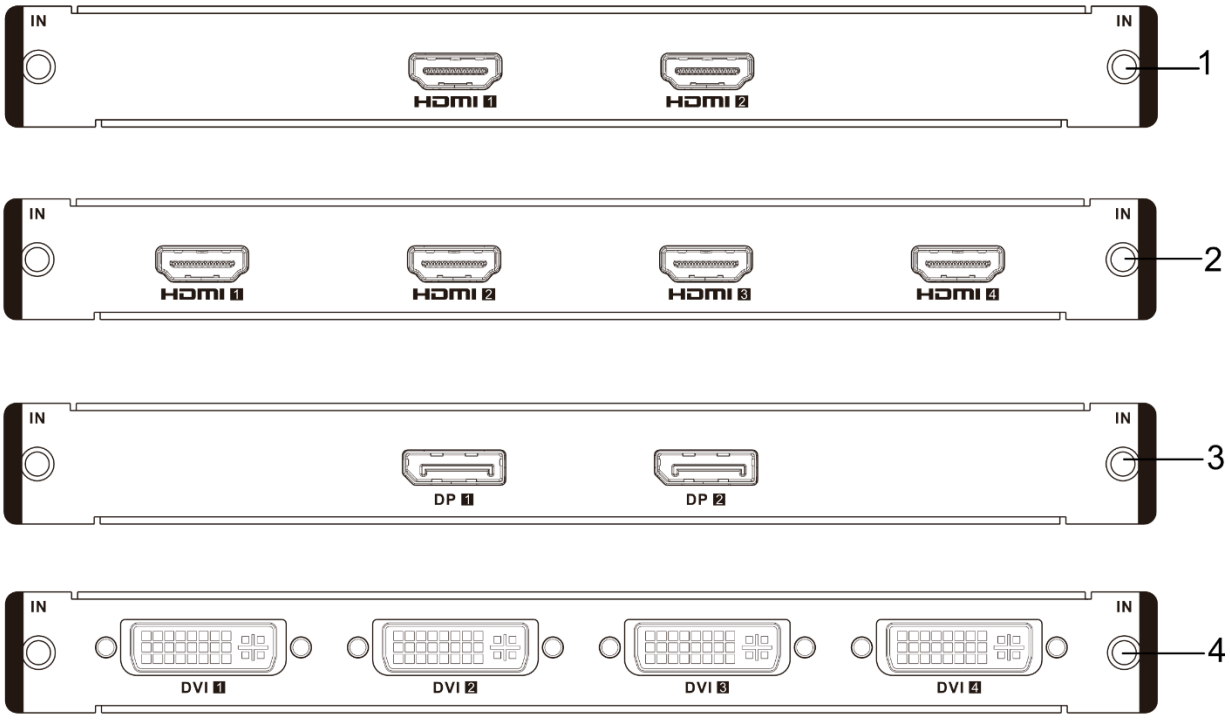

Figure 1-4 Input Board

No.	Name	Description
1	4K HDMI input board	Supports 2 channels of 4K HDMI input. The maximum input resolution of each port is 4096 × 2160@60 Hz.
2	2K HDMI input board	Supports 4 channels of HDMI input. The maximum input resolution of each port is 1920 × 1200@60 Hz.
3	4K DP input board	Supports 2 channels of 4K DP input. The maximum input resolution of each port is 4096 × 2160@60 Hz.
4	DVI input board	Supports 4 channels of DVI input. The maximum input resolution of each port is 1920 × 1200@60 Hz.

Output Board

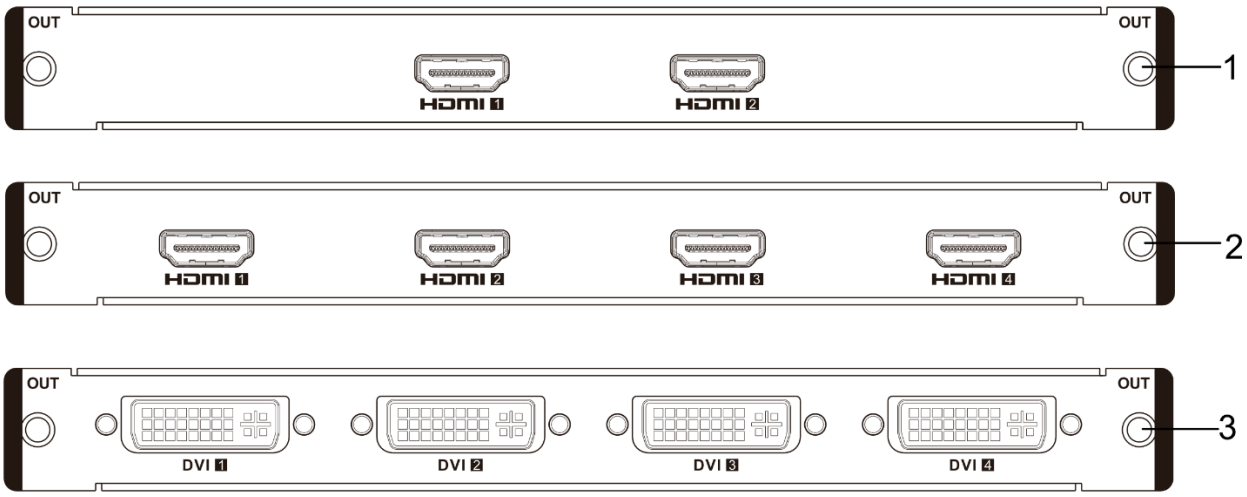

Figure 1-5 Output Board

No.	Name	Description
1	4K HDMI output board	Provides 2 HDMI output ports for connecting to the HDMI ports of the display devices. ● In the default copy mode, the board supports 1 channel of 4K HDMI output. The maximum output resolution of the port is 4096 × 2160@60 Hz. ● In the independent mode, the board supports 2 channels of 4K HDMI output. The maximum output resolution of each port is 4096 × 2160@30 Hz.
2	2K HDMI output board	Supports 4 channels of HDMI output. The maximum output resolution of each port is 1920 × 1200@60 Hz.

No.	Name	Description
3	DVI output board	Supports 4 channels of DVI output. The maximum output resolution of each port is 1920 × 1200@60 Hz.

Preview Board

This board allows you to display the image of a video wall on the connected screen(s) or to preview the image of a video wall on a client. This board provides 1 channel of HDMI output. The output resolution of the port is 1920 × 1080@60 Hz.

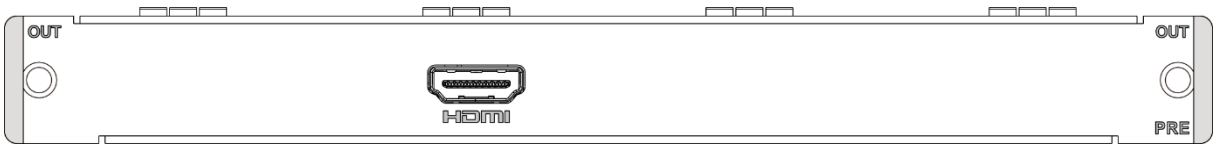

Figure 1-6 Preview Board

Decoding Board

The decoding board provides 24 channels of 1080p@30 fps video decoding capacity.

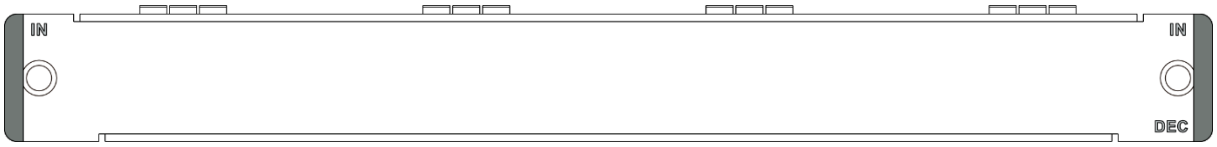

Figure 1-7 Decoding Board

Electrical LED Controller Board

This board provides 20 Gigabit Ethernet ports with the maximum loading resolution of 0.65 MP per port. You can use network cables to directly connect the LED cabinets.

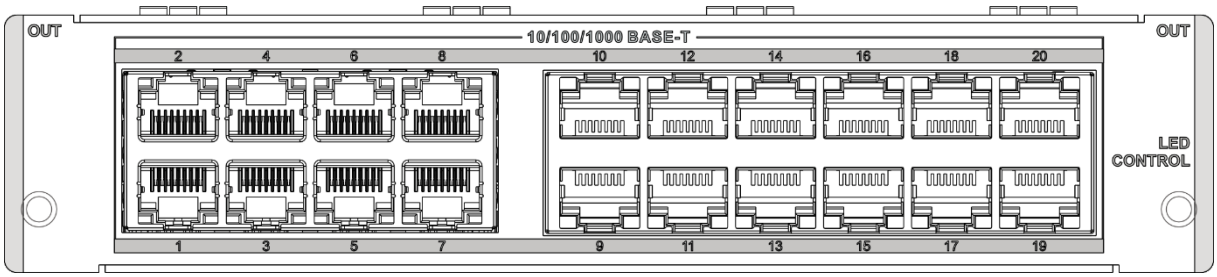

Figure 1-8 Electrical LED Controller Board

Optical LED Controller Board

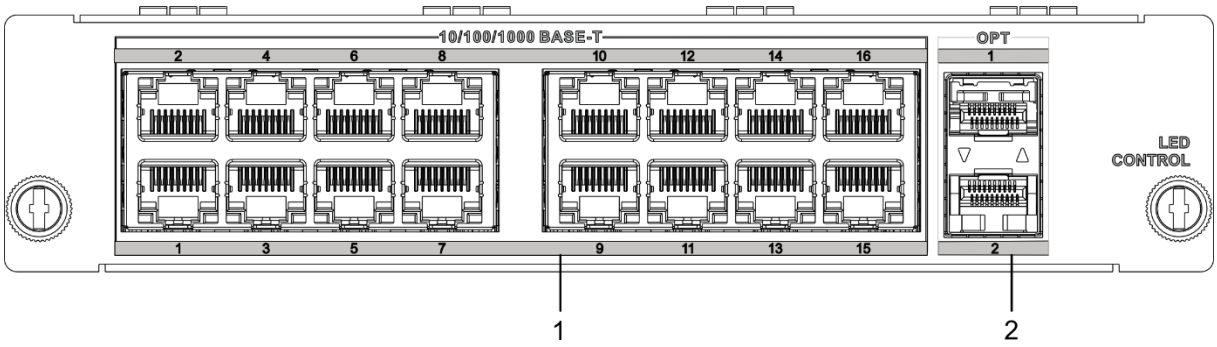

Figure 1-9 Optical LED Controller Board

No.	Name	Description
1	Gigabit network port (1 to 16)	Use network cables to directly connect the network ports to the LED cabinets. The resolution cannot exceed 0.65 MP for each network port and cannot exceed 10.4 MP for all network ports combined. The width ranges from 64 to 16384 pixels, height ranges from 64 to 8192 pixels, and width must be a multiple of 4.
2	10 Gbps optical port (1 and 2)	Insert a 10 Gbps transceiver module into an optical port and then use the optical fibers to connect another optical LED controller board or a 10 Gbps switch. ● Optical port 1 (OPT 1): copy the data from Gigabit ports 1 to 8. ● Optical port 1 (OPT 2): copy the data from Gigabit ports 9 to 16.

Chapter 2 Installation

2.1 Safety Precautions

Caution

As a high-precision, system-level electronic product, the device should be installed and maintained by professionals.

In order to avoid personal and property injury, please read the safety precautions in this section carefully before installation. The following safety recommendations do not cover all possible dangerous situations.

Electricity Safety

- During the installation, wiring, disassembly, and maintenance of the device, please disconnect the power supply and do not operate with electricity (except for the operation of the hot plug).
- In the installation and use of the device, make sure to follow the local electrical safety regulations.
- In case of abnormal phenomena such as smoke or odor occur during the use of the device, please cut off the power immediately, unplug the power cord from the socket, and contact the after-sales service center in time.

Anti-Static Measures

The equipment is a precision electronic device. In order to avoid static electricity from damaging the components, in addition to anti-static measures in the equipment room, you also need to pay attention to the following measures:

- During the installation process (especially when installing the main control board and service board), you must wear anti-static gloves or anti-static wrists.
- When holding the main control board or the service board, try to avoid touching the components or printed circuits.

Grounding Requirements

In order to ensure personal safety and device safety, the device must be grounded.

Power Supply Requirements

The device supports 90 VAC to 264 VAC@50/60 Hz power supply. To ensure the stable operation of the device, it is recommended to install UPS for power supply.

Anti-Interference Requirements

- The on-site power supply system must have effective measures to prevent grid interference.
- Do not use the working ground together with the grounding device or lightning protection grounding device of power equipment, and keep the two as far away as possible.
- Keep away from high-power radio transmitters, radar transmitters, and high-frequency and high-current equipment.
- When necessary, electromagnetic shielding can be used for anti-interference.

Environmental Requirements

The device is a system-level monitoring equipment, which is generally placed in the central equipment room of the monitoring system at all levels. The selection of the installation site should comply with the relevant standards of the equipment room construction in the country and region of use.

The device is a standard rack-mounted equipment. Please pay attention to the following information during installation and use:

- Ensure that the temperature in the rack is from 0 °C to 50 °C.
- Ensure that the humidity in the equipment room is between 10% and 90% RH.
- Ensure that the rack is strong enough to support the weight of the device and its accessories. During the installation, avoid the risk caused by uneven mechanical load.
- Ensure that there is enough installation space for the video and audio cables. The bending radius of a cable should not be less than 5 times the cable outer diameter.
- Keep the horizontal distance between the video wall controller and other devices above 50 cm for sufficient ventilation.

2.2 Open Package and Check Items

Open the device package to verify that all items in the package are intact according to the packing list.

Table 2-1 Packing List

Item	Quantity
Device	1
AC power cord	1
Mounting bracket	1

Item	Quantity
Green Phoenix contact	1
Grounding cable	1
Regulatory compliance and safety information manual	1

2.3 Install a Service Board

The device uses the plug-in modular design. You can install service boards to realize different functions and use the main control board to manage the functions. The device is shipped with the main control board and 5 baffles installed. To ensure normal operation, install at least one input board and one output board in the device.

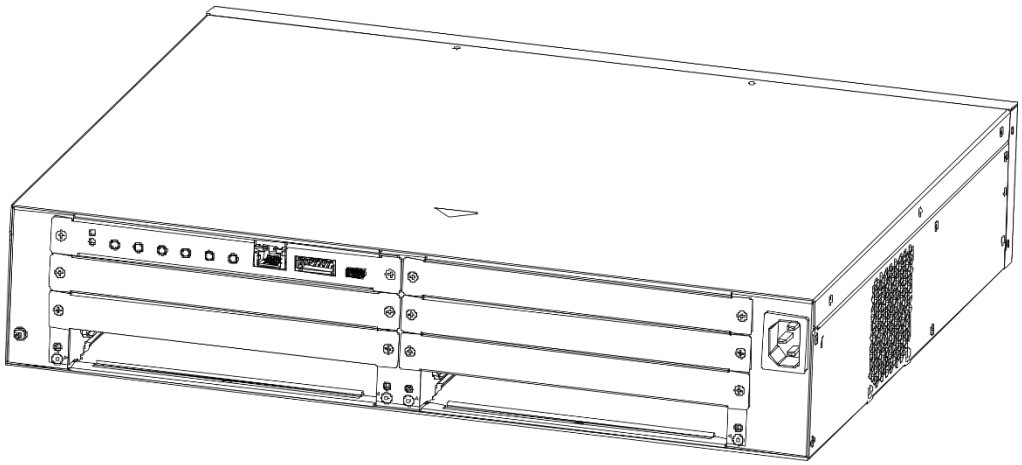

Figure 2-1 Board Configuration at Factory

Step 1 Insert one input board or output board (2) into any empty slot at the bottom of the device, and use the screws (1) to secure the board to the slot.

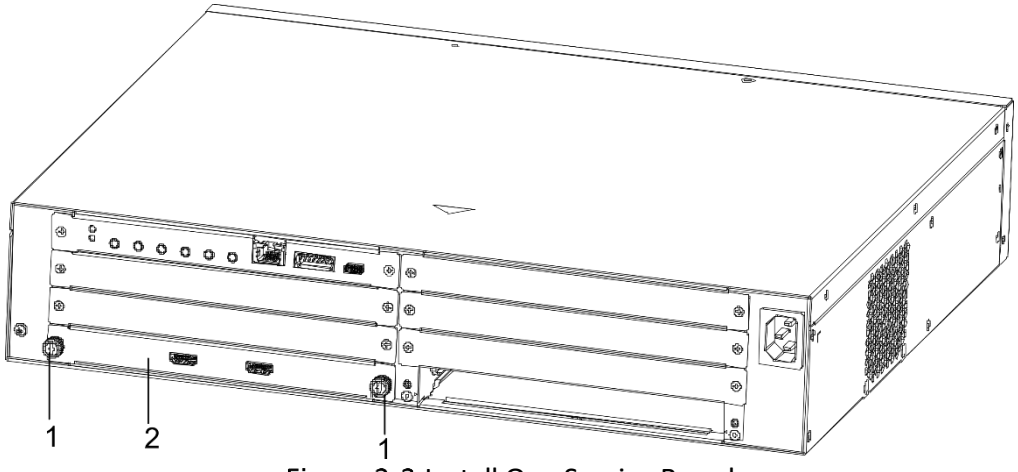

Figure 2-2 Install One Service Board

Step 2 Use the same method to insert another input board or output board (3) into the remaining empty slot at the bottom of the device.

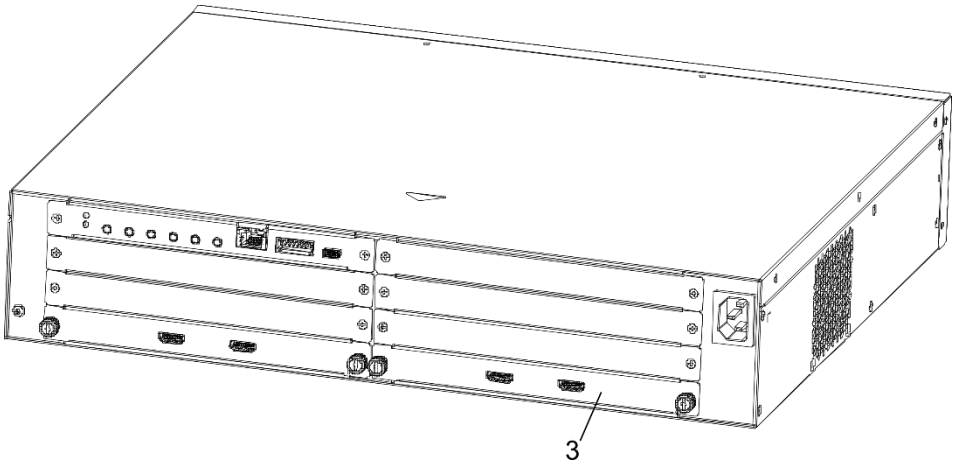

Figure 2-3 Install Two Service Boards

Step 3 To insert another service board, use a screwdriver to loosen the screws (4) on both sides of a baffle and then pull the baffle out of the slot.

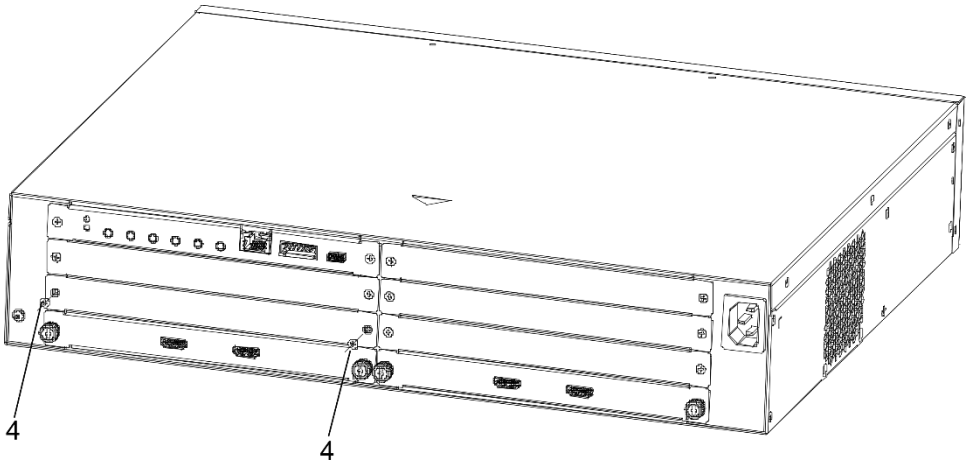

Figure 2-4 Remove the Baffle

Note

If you do not insert a service board into the slot, keep the baffle in the slot to avoid affecting the ventilation.

Step 4 Insert a service board (5) into the slot.

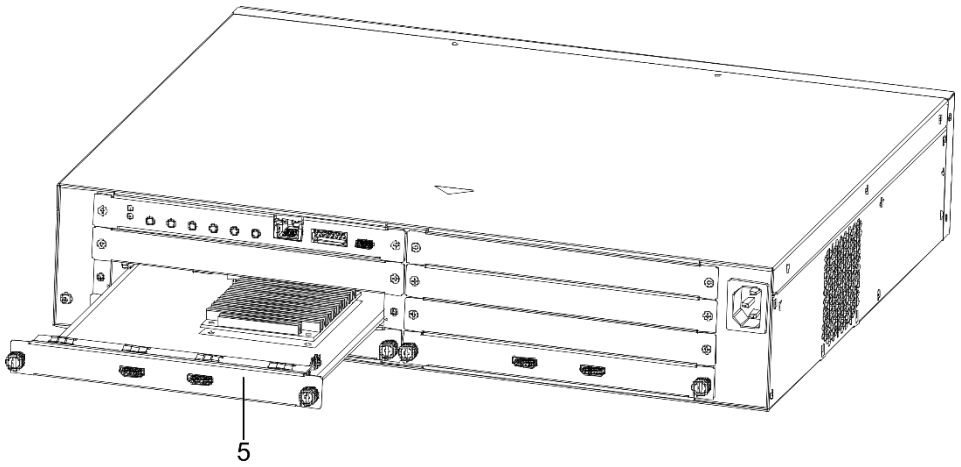

Figure 2-5 Insert a Service Board into Slot

Step 5 Use the screwdriver to tighten the screws on both sides.

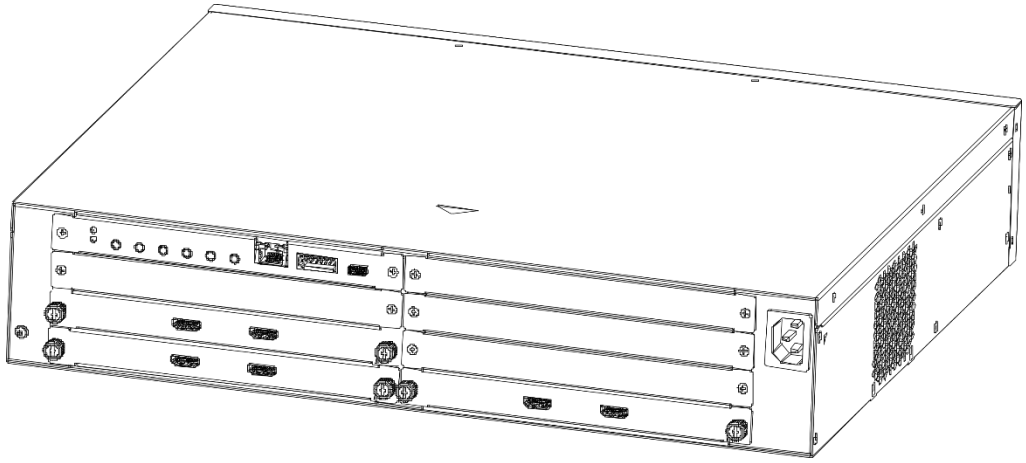

Figure 2-6 Install Three Service Boards

2.4 Install the Device in the Rack

Note

Prepare the rack by yourself.

Step 1 Use the provided M3 × 6 screws (2) to install the mounting brackets (1) to two sides of the device front panel.

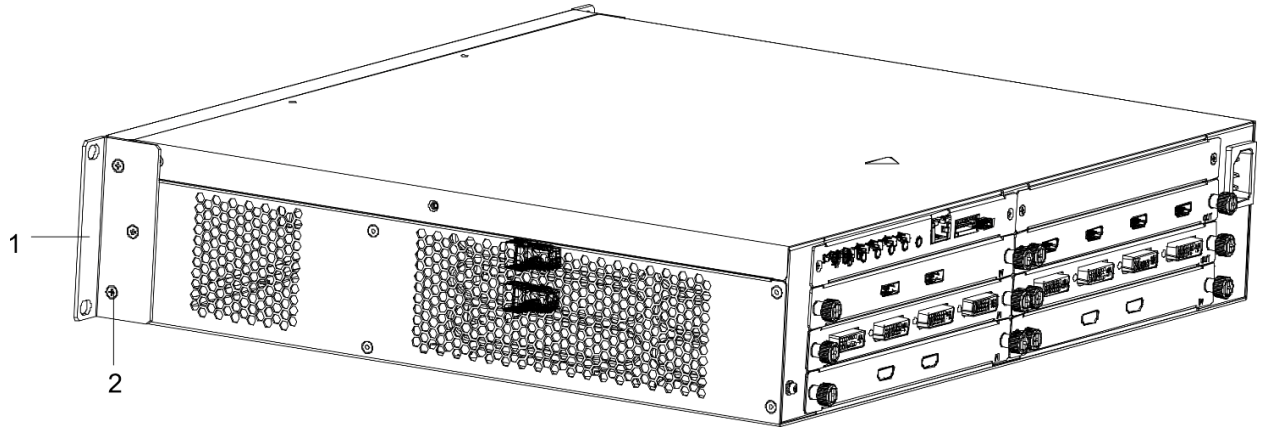

Figure 2-7 Install the Mounting Brackets

Step 2 Select an empty slot on the rack (5) and then use the M6 screws (4) shipped with the rack to secure the mounting brackets (1) to the fixing grooves on both sides of the rack.

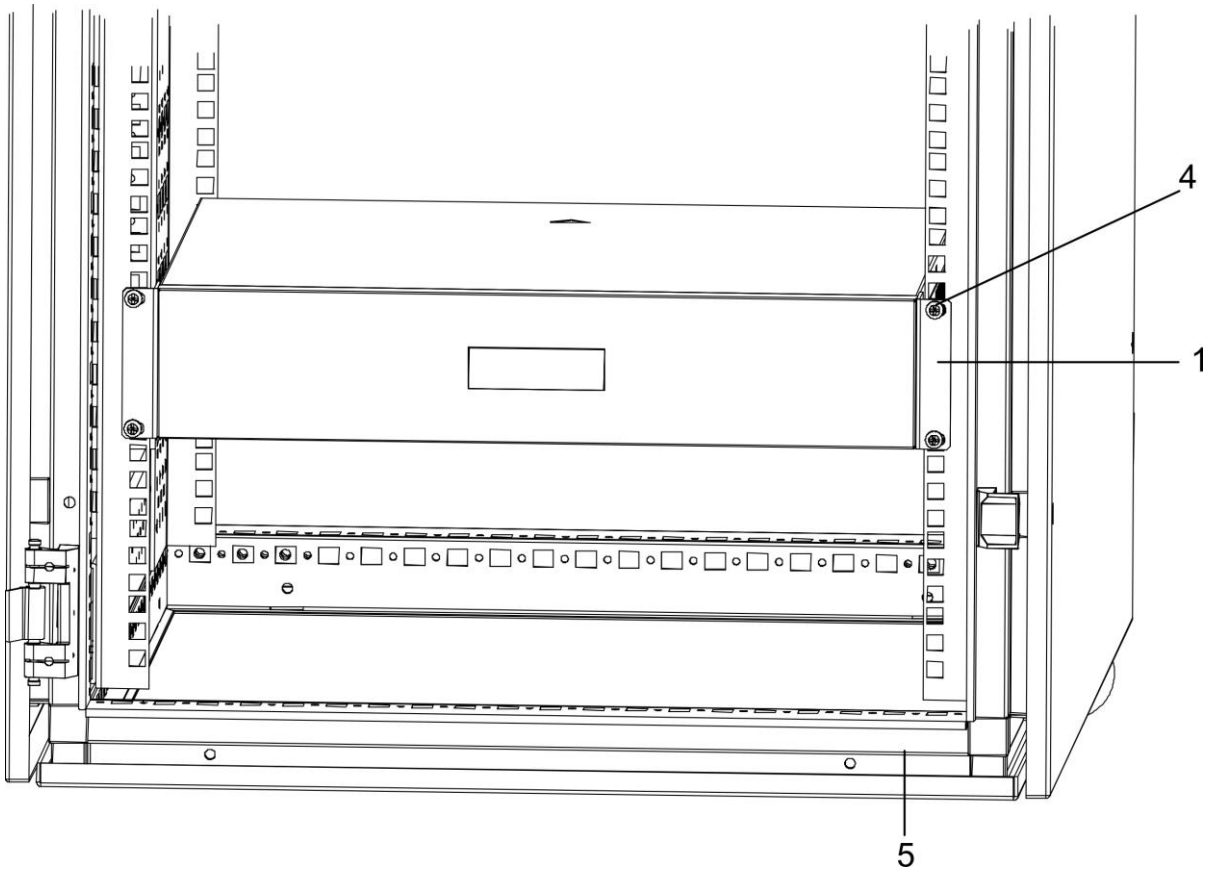

Figure 2-8 Install the Device in the Rack

2.5 Connect the Grounding Cable

Connecting the grounding cable can release the excessive voltage and current induced by lightning shock. Please select the most suitable connection mode to protect the grounding cable according to the installation environment.

Use Grounding Bar

Step 1 Connect one end of the grounding cable (2) to the grounding terminal of the grounding bar (3) in the equipment room.

Step 2 Connect the other end of the grounding cable to the grounding terminal (1) of the device and tighten the screw.

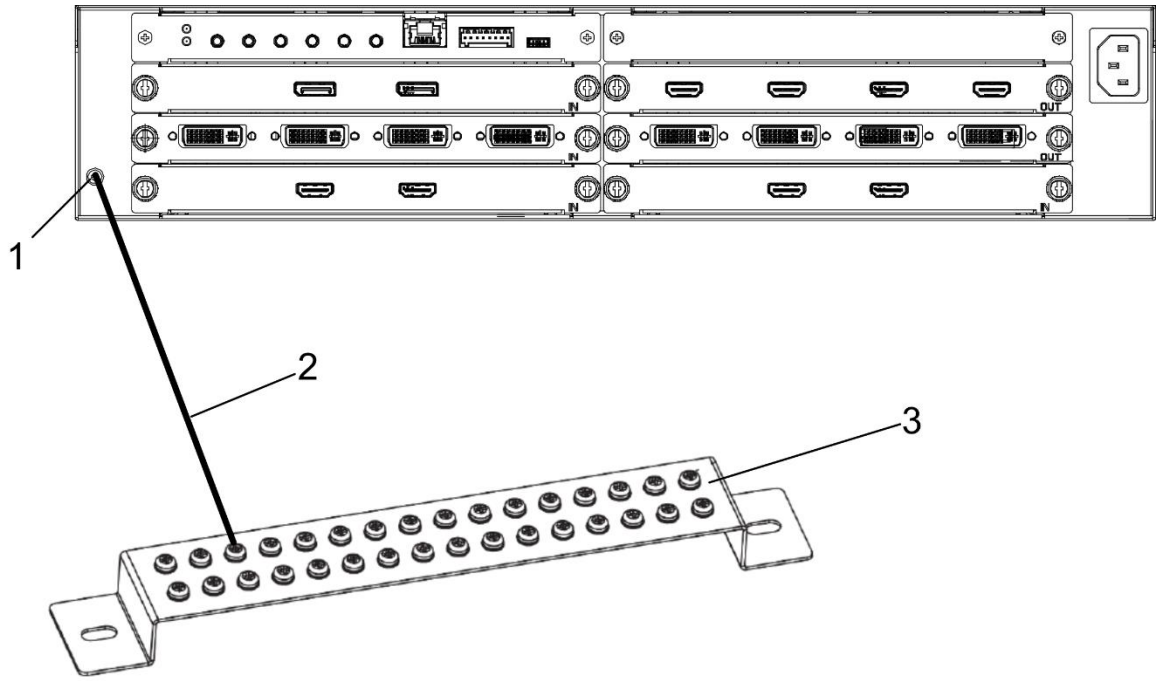

Figure 2-9 Connect the Grounding Cable to the Grounding Bar

Use Grounding Electrode

Step 1 Drive a grounding electrode (4) into the ground (3) of at least 0.5 m.

Step 2 Weld one end of the grounding cable (2) to the grounding electrode and treat the welding points with corrosion protection (electroplate or coating).

Step 3 Connect the other end of the grounding cable to the grounding terminal (1) of the device.

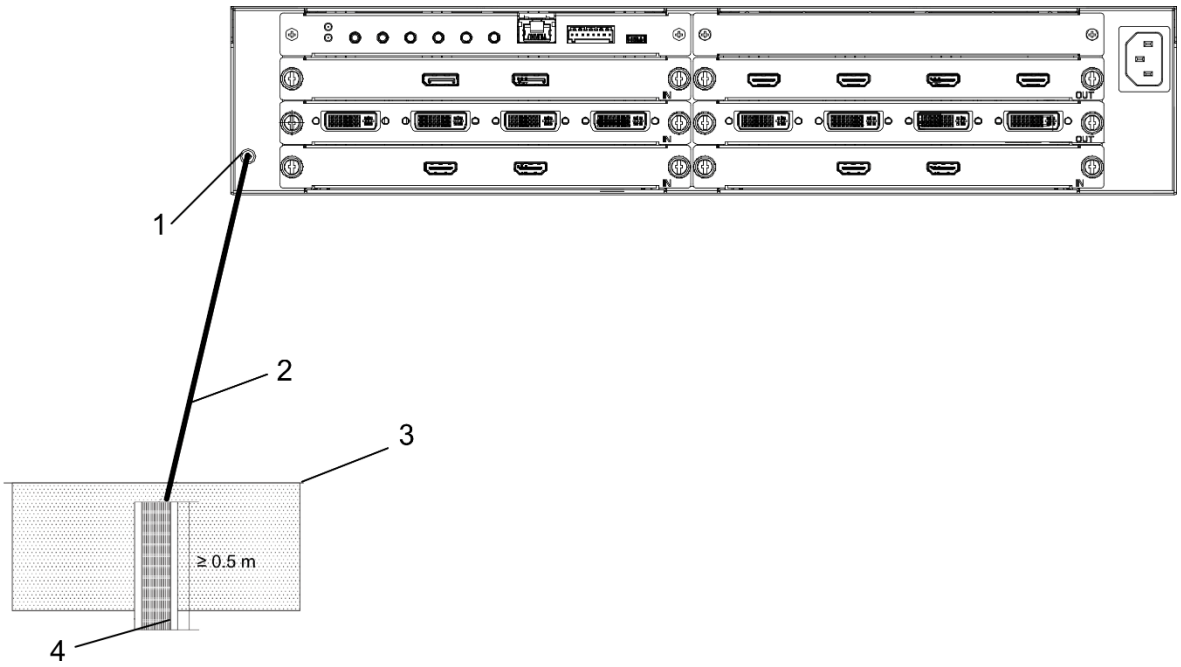

Figure 2-10 Connect the Grounding Cable to the Grounding Electrode

2.6 Connect the Network Cable

The device is connected to the network through networking equipment such as switches. It is recommended to use the CAT 6 Ethernet cable to connect the network port of the device to the network port of the networking equipment.

2.7 Connect the Power Cord

Use a power cord to connect the power supply socket of the device to the power supply in the equipment room. After the power cable is connected, the device is powered on.

Chapter 3 Configuration

Scan the QR code below to view the user manual to configure the device.

Note

Obtaining the manual requires network data traffic. It is recommended to be performed in a Wi-Fi environment.

Figure 3-1 User Manual


See Far, Go Further