

Multi-Functional Video Center

Quick Start Guide

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Preface

Applicable Models

This manual is applicable to the DS-B31 series multi-functional video center.

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 Packing List 1
1.3 Appearance 2
1.3.1 Host System 2
1.3.2 Service Board 4
Chapter 2 Installation 6
2.1 Safety Precautions 6
2.2 Install the Device in the Rack 7
2.3 Install the HDMI Bracket 8
2.4 Connect Cables 9
2.4.1 Connect the Grounding Cable 9
2.4.2 Connect the HDMI Cable 10
2.4.3 Connect the Network Cable 11
2.4.4 Connect the Power Cord 11
Chapter 3 Get More Information 12

Chapter 1 Introduction

1.1 Overview

Designed with reference to the Advanced Telecommunications Computing Architecture (ATCA), the Multi-Functional Video Center (hereinafter referred to as the device) supports matrix switching of analog and digital videos, video encoding and decoding, and network real-time preview. It integrates image processing, network functions, log management and device maintenance, simplifies the installation, maintenance and the whole system, and has good compatibility and expandability. Thus, the device can be widely used in various video system and command control system.

1.2 Packing List

Table 1-1 Device Packing List

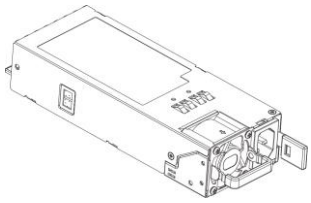
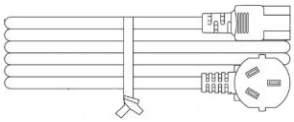
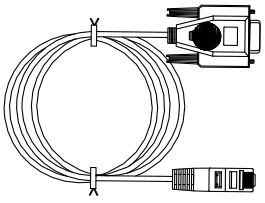
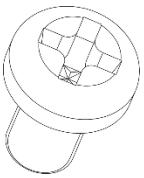
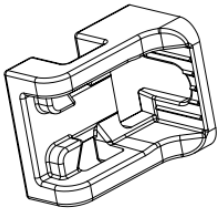
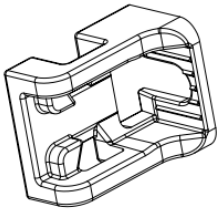
Item	Quantity	Packed In	Item	Quantity	Packed In
 Power supply	1	Chassis	 HDMI bracket	1	Accessory package
 AC power cord	1		 Nylon cable tie	6	
 DB-9 to RJ-45 cable	1		 M3 × 5 screw	2	
Grounding cable	1				
Regulatory compliance and safety information manual	1	/			

Table 1-2 Service Board Packing List

Item	Quantity	Packed In	Item	Quantity	Packed In
 Nylon cable tie	6	Each decoding and encoding board	 Nylon cable tie	4	Each decoding output board
 M3 × 7 screw	6		 M3 × 7 screw	4	
 HDMI snap fitting	6		 HDMI snap fitting	4	

Note

The service board packing list varies by the device configuration. The above service board packing list is for reference only.

1.3 Appearance

1.3.1 Host System

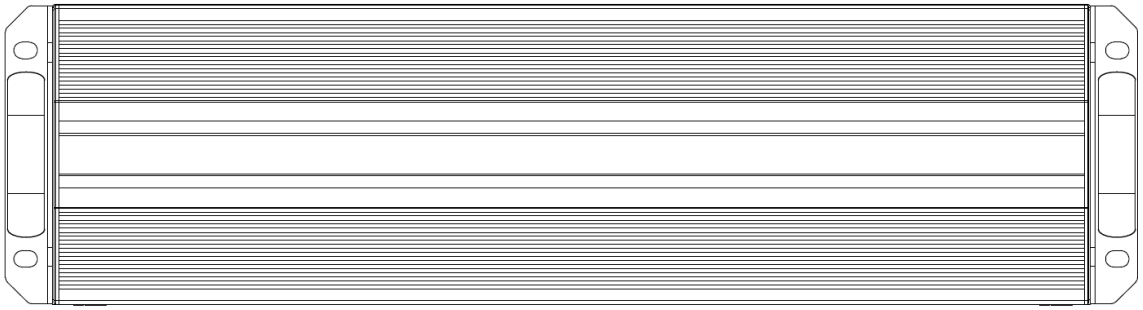


Figure 1-1 Front View of Device

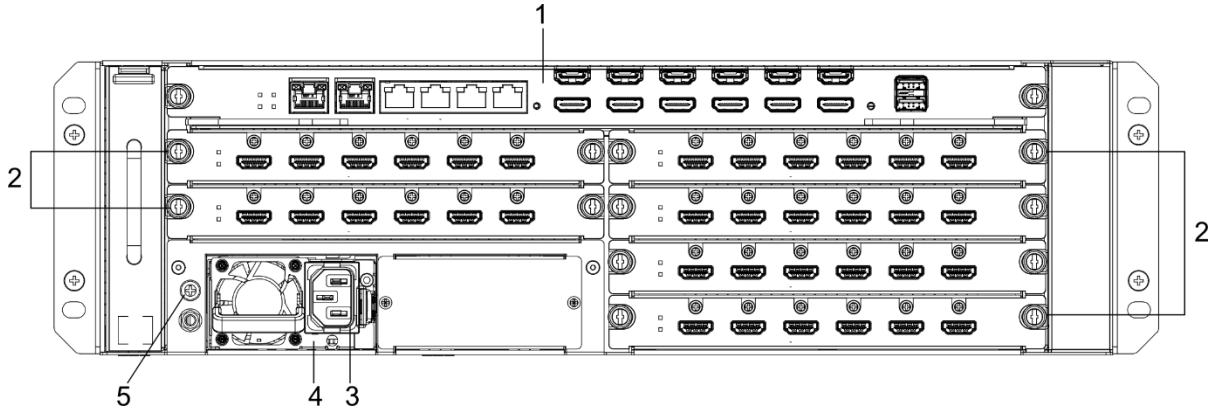


Figure 1-2 Rear View of Device

No.	Name	Description
1	Main control board slot	Insert the main control board.
2	Service board slot	Insert the encoding and decoding boards or decoding output boards.
3	Power socket	Connects to the power cord.
4	Power supply slot	Insert the power supply module.
5	Grounding point	Connects to the grounding cable.

Note

The above figures are for reference only. See actual device for details.

Main Control Board

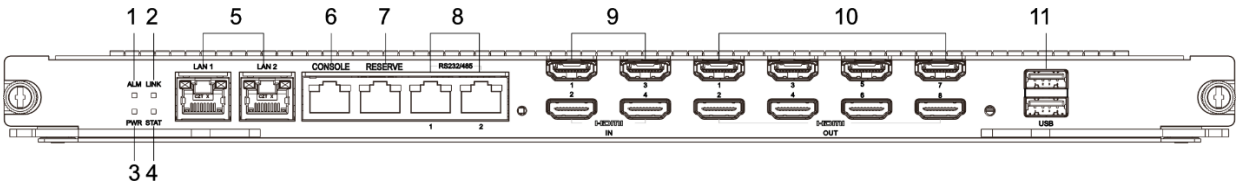


Figure 1-3 Front View of Main Control Board

No.	Name	Description
1	ALM LED	Steady red: the board is abnormal.
2	LINK LED	Steady green: the board runs normally.
3	PWR LED	Steady green: the board is powered on normally.
4	STAT LED	Steady green: the board runs normally.
5	Network port	Connects to the network cable.
6	Console port	Connect to the serial port cable for device debugging.
7	RS-232 port	Reserved.
8	RS-485/RS-232 port	Connects to the external devices that support RS-485 or RS-232 protocol, such as serial port keyboard or analog matrix.
9	HDMI input port (HDMI IN)	Connects to the video source via the HDMI port.
10	HDMI output port (HDMI OUT)	Connects to the display device via the HDMI port.
11	USB 2.0 port	Connects to the USB flash drive.

1.3.2 Service Board

The host system uses different service boards to realize different functions. The service boards are hot swappable. An encoding and decoding board supports video encoding input and video decoding output and a decoding output board supports only video decoding output.

Encoding and Decoding Board

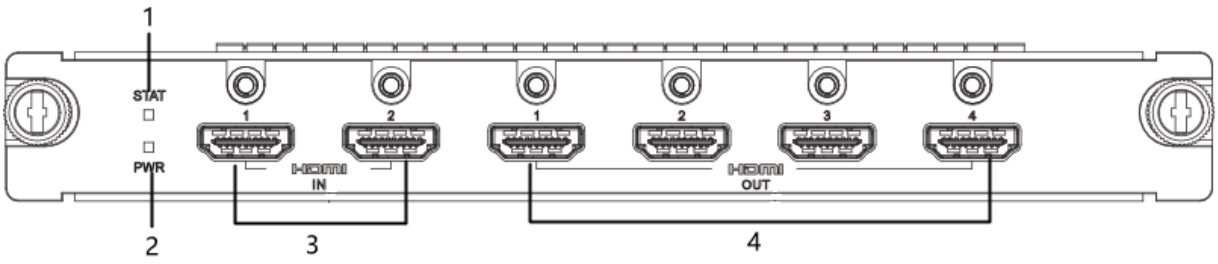


Figure 1-4 Encoding and Decoding Board

No.	Name	Description
1	STAT LED	Steady green: the board runs normally.
2	PWR LED	Steady green: the board is powered on normally.
3	HDMI input port (HDMI IN)	Supports 2 channels of HDMI video input.
4	HDMI output port (HDMI OUT)	Supports 4 channels of HDMI video output.

Decoding Output Board

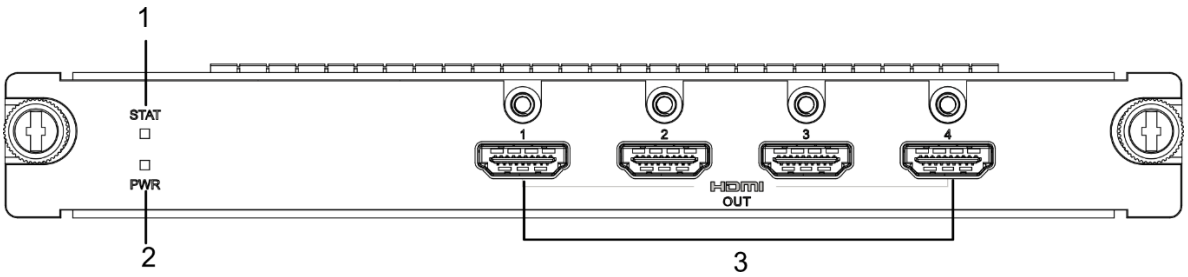


Figure 1-5 Decoding Output Board

No.	Name	Description
1	STAT LED	Steady green: the board runs normally.
2	PWR LED	Steady green: the board is powered on normally.
3	HDMI output port (HDMI OUT)	Supports 4 channels of HDMI video output.

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 100 VAC to 240 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 45 °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 multi-functional video center and other devices above 50 cm for sufficient ventilation.

2.2 Install the Device in the Rack

Note

Prepare the rack by yourself.

Step 1 Install a rack bracket on an empty slot of the rack and secure the rack bracket by screws. Make sure the rack bracket can support the device.

Step 2 Place the 3 U device on the bracket and use the user-supplied M6 screws (1) to secure the mounting brackets (2) to the fixing grooves on both sides of the rack.

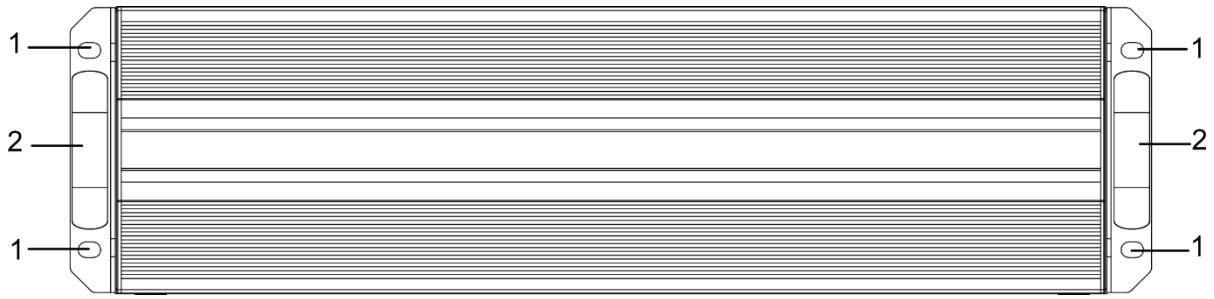


Figure 2-1 Install the Device in the Rack

2.3 Install the HDMI Bracket

Step 1 Align the HDMI bracket (1) with the lower side of the HDMI signal output port on the main control board (3).

Step 2 Use two M3 × 5 screws (2) to secure the two sides of the HDMI bracket.

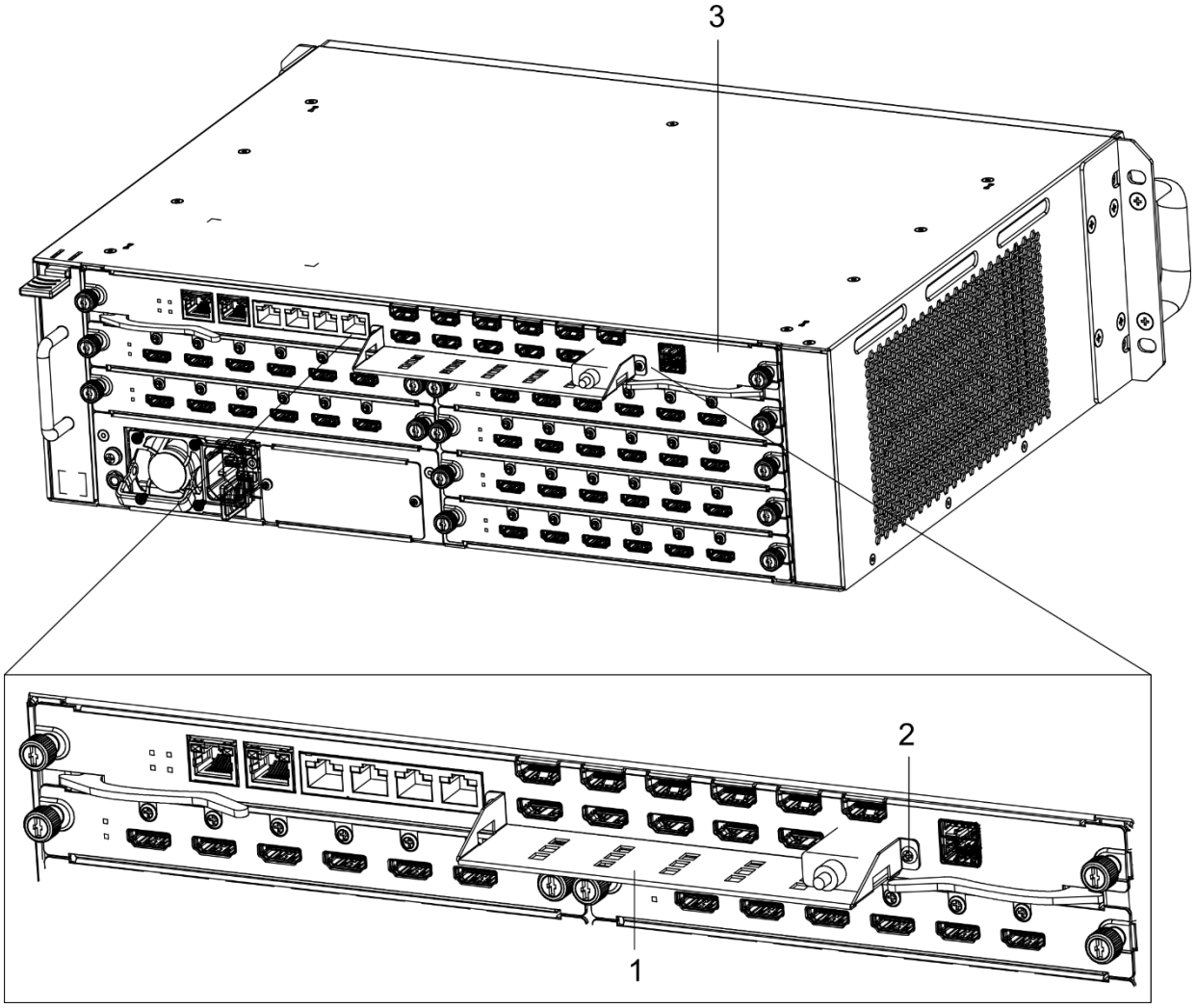


Figure 2-2 Install the HDMI Bracket

Note

The HDMI bracket supports reverse installation. When the HDMI bracket is reversely installed, you can connects HDMI cables of only one layer.

2.4 Connect Cables

2.4.1 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.

With Grounding Row

Step 1 Connect one end of the grounding cable (2) to the grounding terminal of the grounding row (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.

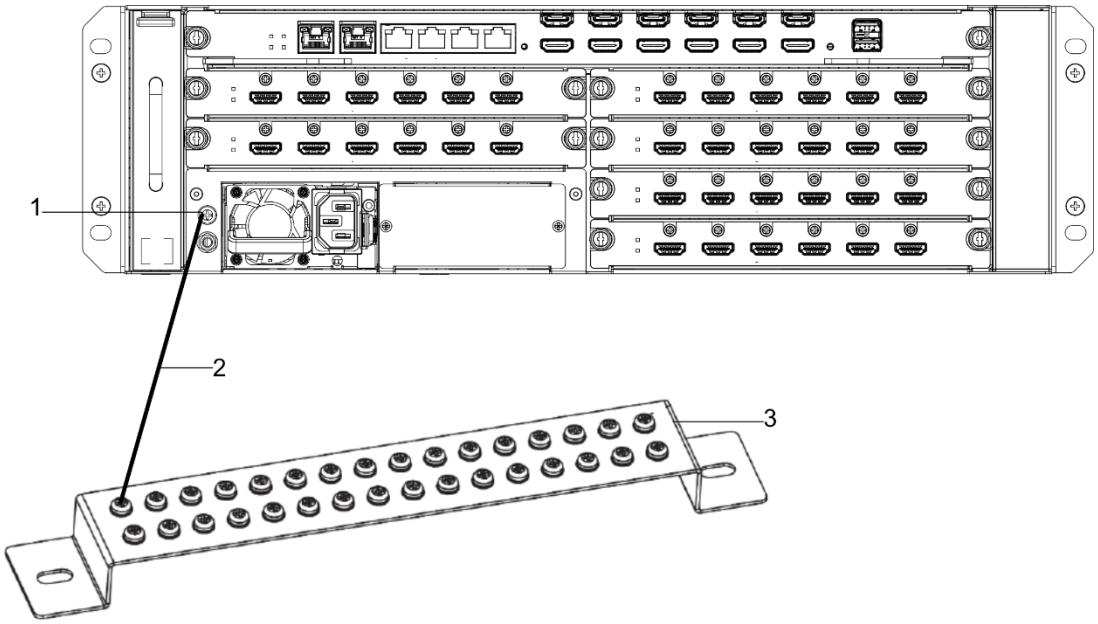


Figure 2-3 Connect the Grounding Cable to the Grounding Row

Without Grounding Row

Step 1 Drive an angle steel (4) or steel pipe into the ground (3) of at least 0.5 m.

Step 2 Weld one end of the grounding cable (2) to the angle steel or steel pipe 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.

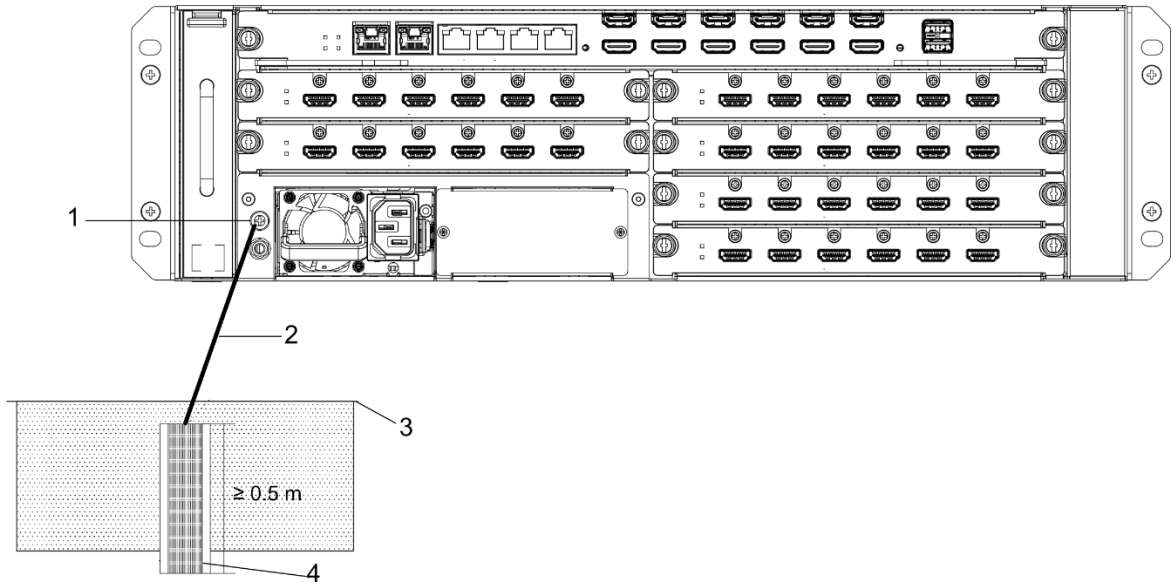


Figure 2-4 Connect the Grounding Cable to the Ground

2.4.2 Connect the HDMI Cable

For the transmission of audio and video signals, purchase HDMI cables and connect them to the following boards:

- Install the HDMI bracket (2) to the main control board (1), connect the HDMI cables (3) to the main control board, and then use the cable ties to secure multiple HDMI cables.

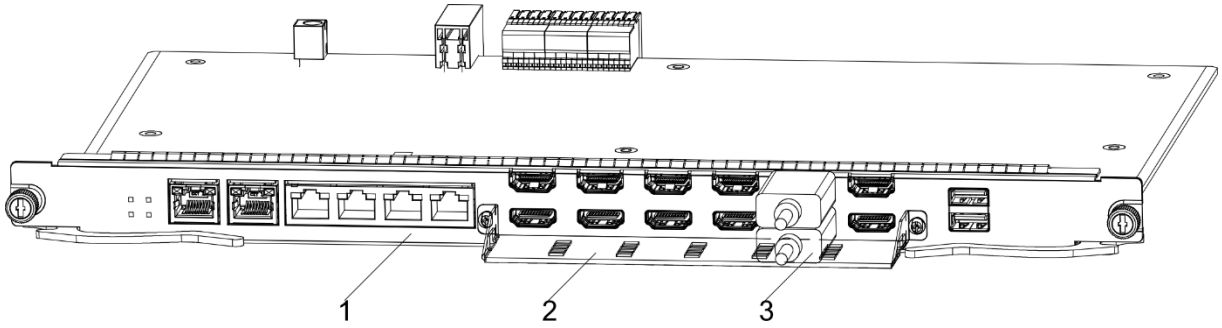


Figure 2-5 Connect HDMI Cable to Main Control Board

- Connect an HDMI cable (2) to a service board (1), install an HDMI snap fitting (3), and then reeve a cable tie through the HDMI snap fitting to secure the HDMI cable to the HDMI snap fitting.

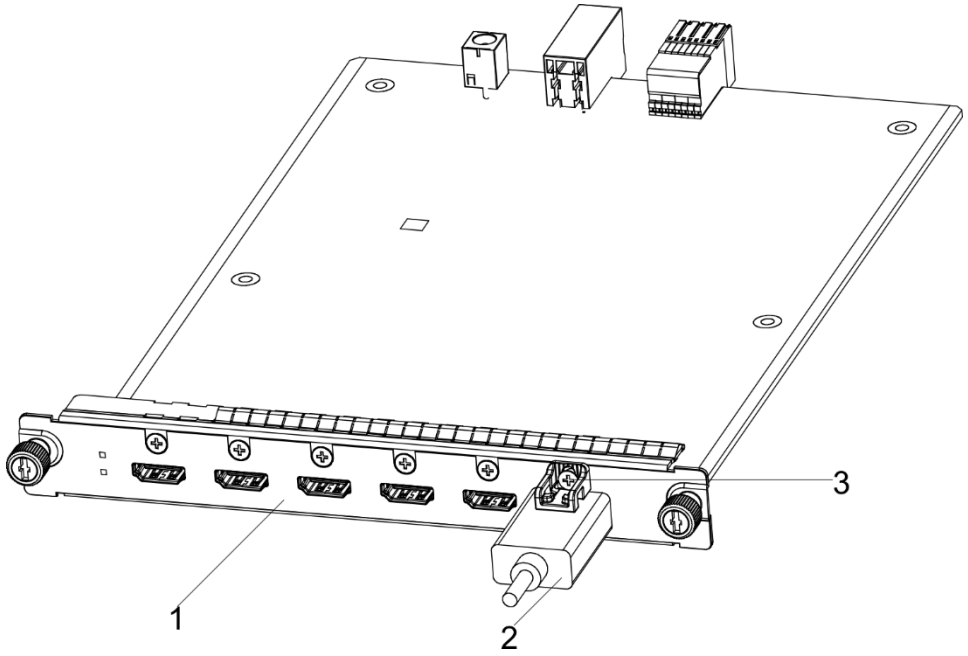


Figure 2-6 Connect HDMI Cable to a Service Board

2.4.3 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.

- Generally, use one network cable to connect the LAN 1 port of the device to the networking equipment.
- When the number of streaming channels exceeds 192 channels of 1080p, perform the port aggregation on the networking equipment, and then use two network cables to connect two network ports (LAN 1 and LAN 2) of the device to the networking equipment.

2.4.4 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 Get More Information

Scan the QR code below to view the user manual.

Note

Scanning the QR code requires network data traffic. It is recommended to scan the QR code in a Wi-Fi environment.

Figure 3-1 User Manual



UD38468B-A