DC4301-IN
Video Decoder
Quick Guide

Manual Version: P101-20140414

Notice

The information in this manual is subject to change without notice. Every effort has been made in the preparation of this manual to ensure accuracy of the contents, but all statements, information, and recommendations in this manual do not constitute the warranty of any kind, express or implied.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Preface

Audience

This manual is intended for:

- Surveillance system planners
- Field technical support and servicing engineers
- Software installation, configuration, and servicing administrators
- Product users

Precautions

- If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, you might be required to take corrective actions.
- Do not remove the dismantlement-preventive seal from the chassis cover of the device without permission. If you want to open the

chassis, contact the local agent of our company for help. Otherwise, we shall not be held liable for any consequence caused thereby.

- Make sure the device is sturdy and well grounded and meets heat dissipation and lightning protection requirements. Avoid vibration when using the device.
- Provide a stable and compliant power supply before powering on the device.
- Before performing the verification (refer to section “Check Before Power-On”), make sure that the power is disconnected, for fear of bodily injury or equipment damage caused by incorrect cable connection.
- Power interruption may cause hard disk damage or abnormal functions. To shut down the device, strictly follow the instructions. If power interruption often occurs, configure an uninterrupted power supply (UPS).

Safety and Compliance Information

Conventions Used Symbol

The symbols in this chapter are shown in the following table. They are used to remind the reader of the safety precautions during equipment installation and maintenance.

Safety Symbol	Description
	Generic alarm symbol: To suggest a general safety concern.
	ESD protection symbol: To suggest electrostatic-sensitive equipment.
	Electric shock symbol: To suggest a danger of high voltage.

Safety Information

WARNING!

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

Warnings:

- If the product does not work properly, please contact your dealer or the nearest service center. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all the local codes.
- Please install blackouts equipment into the power supply circuit for convenient supply interruption.
- The separate earthing terminal must be permanently connected to earth.
- For AC supplied model: The plug-socket combination must be accessible at all times as it serves as the main disconnecting device.
- Before the power cable is installed or removed, the power must be turned off.
- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Improper use or replacement of the battery may result in hazard of explosion. Please use the manufacturer recommended battery type.

Caution: Fiber optic ports – optical safety.

Never look at the transmit laser while the power is on. Never look directly at the fiber ports and the fiber cable ends when they are powered on.

Caution: Use of controls or adjustments to the performance or procedures other than those specified herein may result in hazardous laser emissions.

Regulatory Compliance

FCC Part 15

This equipment has been tested and found to comply with the limits for digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

LVD/EMC Directive

This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.

WEEE Directive–2002/96/EC

The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

Contents

1 Overview 1

Appearance 1

LEDs 2

Ports and Buttons 3

2 Device Installation 5

Precautions 5

Installation Flow 6

Installing the Video Output Card 8

Installing the EPON Subcard or Dual-Port SFP Subcard 9

Installing the DC4301-IN in an Outdoor Protective Box 9

Installing the DC4301-IN in a Rack 10

Installing the DC4301-IN in a Rack with a Frame 10

Installing the DC4301-IN in the Rack with Holders 11

Installing the DC4301-IN in the Rack Directly 11

Connecting the Cables 12

Connecting Cables to Ports on the Front Panel 12

Connecting Cables to Ports on the Rear Panel 13

Audio Cable and Alarm Cable Connection 14

Connecting a Third-Party Device 16

RS-232 Serial Cable Connection 16

Verifying the Installation 16

Starting Up the DC4301-IN 17

3 Logging In to and Logging Out of the DC4301-IN 17

4 Technical Specifications 18

5 Relationship Between Video Input Cards, Video Output Cards, Video Standards, and Display Device Ports 20

1 Overview

NOTE!

This document presents the hardware information of the DC4301-IN, how to install it, and how to quickly configure it through the web interface.

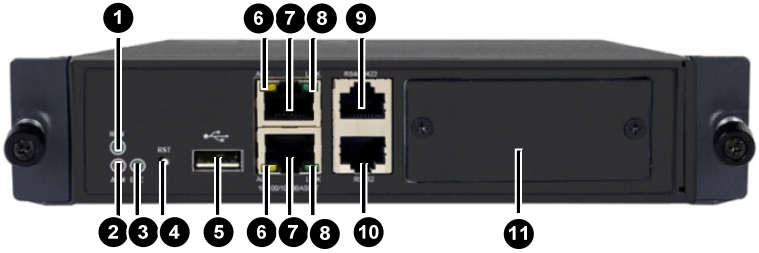
The DC4301-IN high-definition video decoder (hereinafter referred to as the DC4301-IN) is a new-generation network media terminal designed mainly for remote video surveillance. They are applicable to monitoring and listening to remote sites in real time, and can be widely applied to real-time surveillance applications in security protection, transportation monitoring, and electricity industry..

For more information about its technical specifications, see Table 4-1.

Appearance

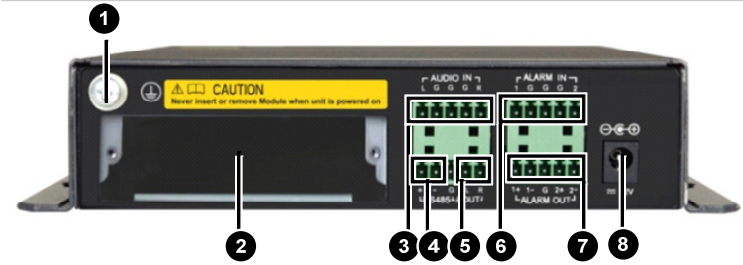
The DC4301-IN appearance described in this manual is for reference only.

Figure 1-1 Front view



1: Running LED	2: Alarm LED
3: Decoding LED	4: Reset button
5: USB port	6: Active LED
7: Ethernet port	8: Link LED
9: RS-485/422 port	10: RS-232 port
11: Blank filler panel for the subcard slot	

Figure 1-2 Rear view



1: Ground terminal	2: Video output card slot	3: Audio out port
4: RS-485 port	5: Audio out port	6: Alarm in port
7: Alarm out port	8: 12 VDC power input	

LEDs

Table 1-1 LEDs descriptions

LED	State	Meaning
RUN	Blinking	The device is starting up.
	On	The device is operating normally.
	Off	The device is powered off.
ALM	On	At least one device alarm (for example, temperature alarm) is present.
	Off	No device alarm is present.
DEC	Blinking	The device is decoding.
	Off	The device has stopped decoding.
ACT	Blinking	There is data being transmitted.
	Off	There is no data being transmitted.

LED	State	Meaning
LINK	On	A link is present.
	Off	No link is present.

Ports and Buttons

Table 1-2 Description of ports/buttons on the front panel

Port/Button	Quantity	Description	Remarks
RST	1	Reset button	• If you press the button for less than three seconds, the device reboots. • If you press and hold the button for more than three seconds and then release it, the device will reboot and restore the factory-default configuration.
USB	1	USB2.0	Reserved for connecting to storage devices
Ethernet port	2	10M/100M/auto-negotiation Half duplex/full duplex auto-negotiation RJ45 port	Connects to Ethernet
RS-485/422	1	RJ45 port	Provides interactive control with the connected device, for example, the third-party device. This port is compatible with RS-485 and RS-422 standards.

Port/Button	Quantity	Description	Remarks
RS-232	1	RJ45 port	Commissions and maintains the DC4301-IN
Subcard slot	1	Slot for the EPON subcard or dual-port SFP subcard	Holds subcard after the blank filler panel is removed

NOTE!

Please select appropriate 1000-Mbps optical module according to the ambient temperature. If the Ethernet optical port is used outdoors, the upper temperature limit of the used optical module should be more than 85°C (185°F).

Table 1-3 Description of ports on the rear panel

Port	Quantity	Description	Application
Video out card slot	1	A slot where the recommended HDMI or VGA output card is installed. For details, see "Installing the Video Output Card".	Outputs analog or digital video signals to analog signal display devices, such as monitors.
RS-485	1	Phoenix contact	Provides interactive control with the connected device, for example, the third-party device.
AUDIO IN	1	Phoenix contact, audio signals input 2V (P-P)	Reserved for inputting audio signals

Port	Quantity	Description	Application
AOUT	1	Phoenix contact, left channel output 2V (P-P)	Outputs audio signals
ALARM IN	2	Phoenix contact, which supports line detection	Inputs alarm signals
ALARM OUT	2	Phoenix contact, which is the output of the delay switch of an internal relay	Outputs alarm signals
DC 12V	1	Power port, 12 VDC	Connects to the power adapter

2 Device Installation

Precautions

Checking Device Components

Unpack the container and remove the items out carefully. Check items against the packing list and ensure all items listed are included in the container.

WARNING!

Do not remove the dismantlement-preventive seal from the chassis cover of a DC4301-IN without permission. If you want to open the chassis, contact the local agent of our company for help. Otherwise, we shall not be held liable for any consequence caused thereby.

Checking the Installation Environment

When installed outdoors, the DC4301-IN must be fixed in an outdoor protective box while meeting outdoor lightning protection and grounding requirements.

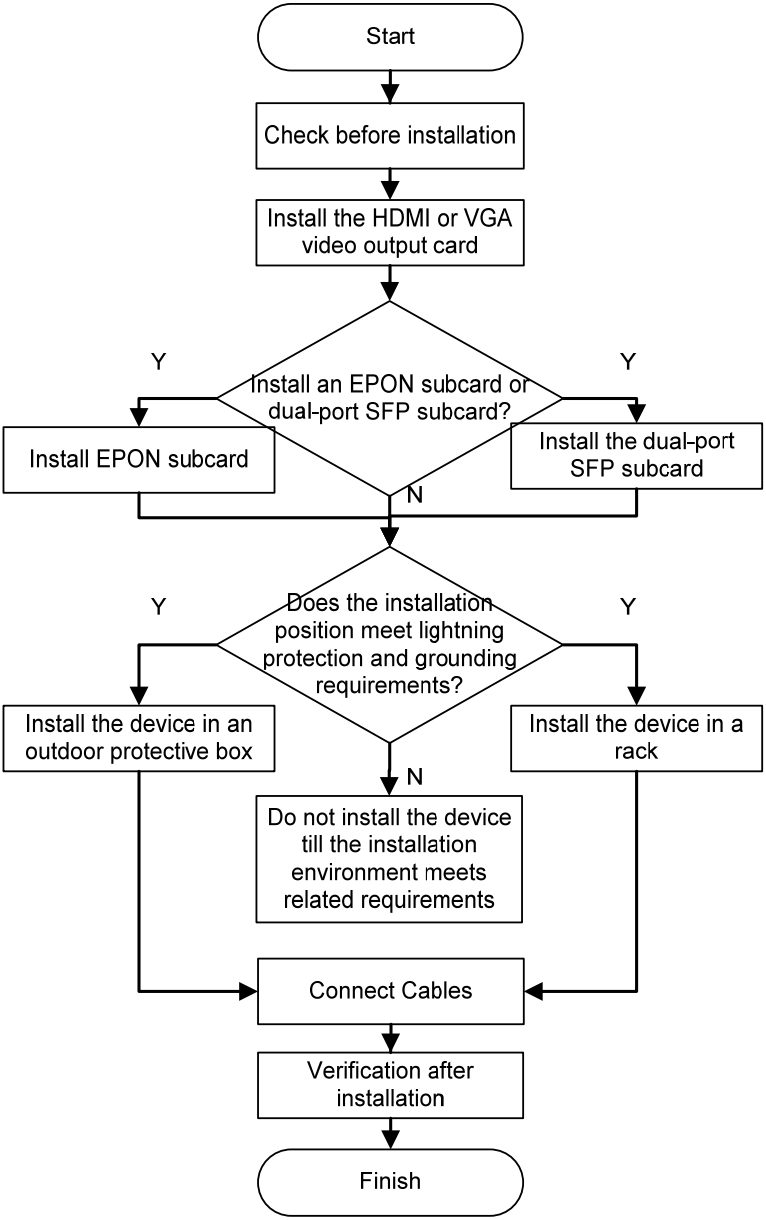
- Ensure that appropriate lightning protection facilities are chosen for device power supply, audio and video signals, and the RS-485 port.
- Ensure that the device is correctly grounded through a grounding screw. For details, refer to *DVS/DC Cable Connection Guide*.

When installed indoors, the DC4301-IN must also meet lightning protection and grounding requirements by using the same methods as described above.

Installation Flow

Before installing the DC4301-IN, make sure it is disconnected from the power source.

Figure 2-1 Installation flow



Installing the Video Output Card

Table 2-1 describes the types of video output cards supported by the DC4301-IN.

Table 2-1 Video output cards

Type	Description
HDMI	Provides a HDMI audio/video output port to connect a HDMI digital device such as a PC or TV set to output digital audio/video signals.
VGA	Provides a VGA video output port to only connect a YPbPr-enabled device such as a PC or TV set or a VGA-enabled device to output analog video signals.

Figure 2-2 and Figure 2-3 show how to install various video output cards on the DC4301-IN.

Figure 2-2 Installing the HDMI video output card

Figure 2-3 Installing the VGA video output card

Installing the EPON Subcard or Dual-Port SFP Subcard

As shown in Figure 2-4 or Figure 2-5, remove screws, take down the blank filler panel, insert the recommended EPON subcard or dual-port SFP subcard, and then fasten captive screws.

Figure 2-4 Installing EPON subcard

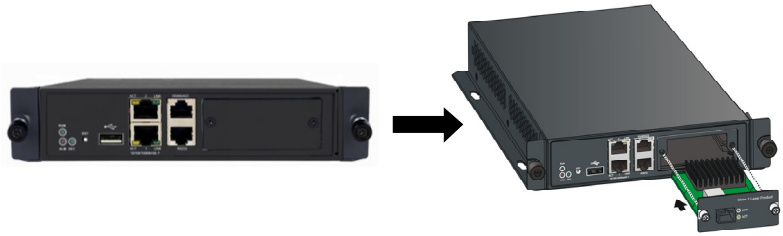
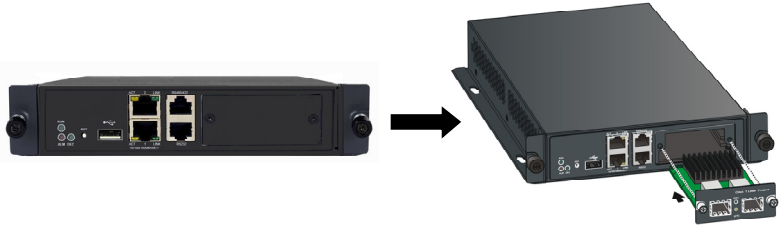


Figure 2-5 Installing the dual-port SFP subcard



Installing the DC4301-IN in an Outdoor Protective Box

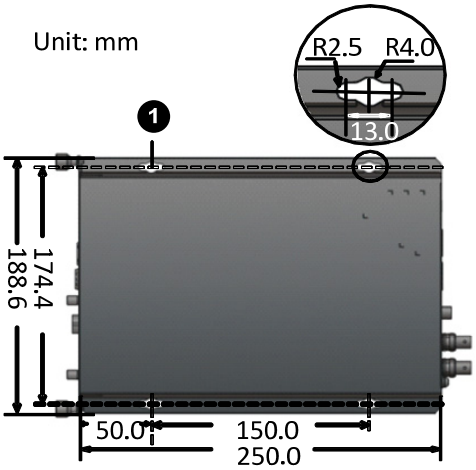
NOTE!

The outdoor protective box must meet certain conditions. For details, refer to *DVS/DC Cable Connection Guide*.

Horizontally insert the DC4301-IN into an outdoor protective box vertically mounted on the wall.

As shown in Figure 2-6, place the two sides with waist-shaped wall mounting holes close to the inner wall of the protective box, and fix the device inside the protective box with screws. Then ventilation holes are at the top and bottom of the device to better facilitate air convection. Ensure that the top and bottom ventilation holes are at least 10 cm away from the surrounding wall.

Figure 2-6 Vertical view of the DC4301-IN



1: Mounting hole

Installing the DC4301-IN in a Rack

Installing the DC4301-IN in a Rack with a Frame

1. As shown in Figure 2-7, install the mounting brackets of the DC4301-IN.

Figure 2-7 Installing the mounting brackets

2. To install the DC4301-IN in a rack with frames, refer to *Video Encoder/Decoder Frame Installation Guide*.

Installing the DC4301-IN in the Rack with Holders

1. As shown in Figure 2-7, install the mounting brackets of the DC4301-IN.
2. To install the DC4301-IN in a rack with holders, refer to *1U DVS/DC Holder Installation Manual*.

Installing the DC4301-IN in the Rack Directly

To install the DC4301-IN in the rack directly, you need to fix the device to the rack securely. Keep a clearance around the air vents on the two sides of the DC4301-IN for heat dissipation, and do not stack other devices on the DC4301-IN.

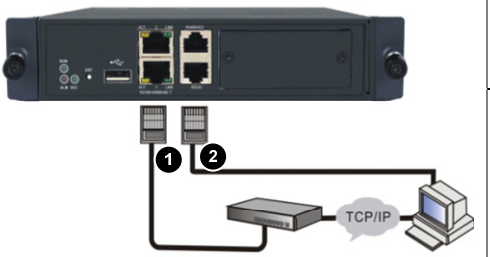
Connecting the Cables

CAUTION!

- Before connecting the cables, ensure that the device is already powered off to avoid bodily injury or equipment damage caused by incorrect cable connection.
- Ensure that all external cables of the DC4301-IN meet relevant standards. For details about cable selection, refer to *DVS/DC Cable Connection Guide.*.

Connecting Cables to Ports on the Front Panel

Figure 2-8 Install cables to ports on the front panel



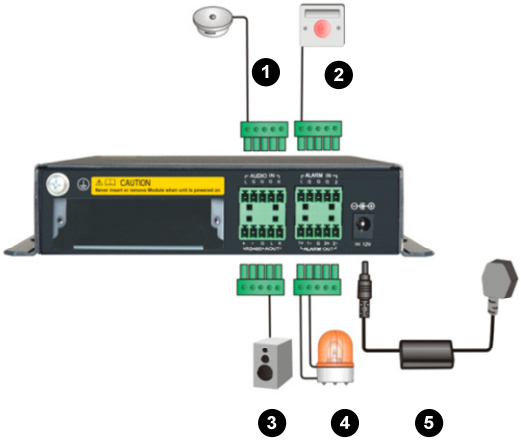
1: Connecting to a network through a network cable

2: Connecting to a serial device (such as a PC) through a serial cable

Connecting Cables to Ports on the Rear Panel

Connect to other devices as needed. For how to connect to another device, refer to related documents of the device.

Figure 2-9 Install cables to ports on the rear panel



1: Monitor
2: Alarm input device
3: Ground
4: Speaker
5: Alarm output device
6: Power source

Audio Cable and Alarm Cable Connection

Figure 2-10 Audio cable connection for DC4301-IN

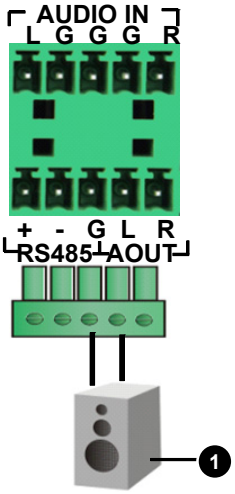
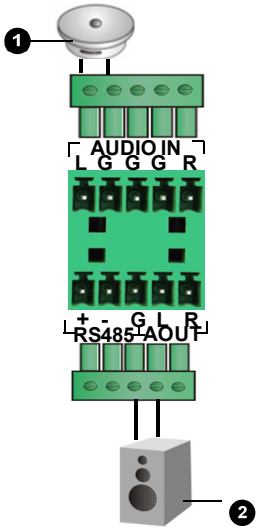
	1: Audio output device (for example, speaker)

Figure 2-11 Alarm cable connection for DC4301-IN



1: Normally-on/off Boolean alarm input device, such as an audio or temperature alarm device

2: Normally-on/off Boolean alarm output device, such as an alarm LED (The alarm LED supports multiple connection modes. Here, only one connection mode is shown as an example.)

NOTE!

- To work with the DC4301-IN, the operating voltage and current of the Boolean alarm output device connected to the DC4301-IN should not exceed 12 VDC/0.7 A, respectively.
- Figure 2-11 shows the alarm cable connection for the DC4301-IN without line detection. If the DC4301-IN needs to support line detection, the alarm cable connection is different. For details, refer to *DVS/DC Cable Connection Guide*.

Table 2-2 Phoenix contact port description for DC4301-IN

Terminal	Description	Terminal	Description
AUDIO IN:L,R	Connect an audio input device (for the reserved left channel and right channels)	ALARM IN: 1-2	Connect two alarm input devices.

Terminal	Description	Terminal	Description
AOUT:L,R	Connect an audio output device **Note:** Currently only the left audio channel is available.	ALARM OUT: 1+, 2+	Connect two alarm output devices.(with alarm signal output is positive)
ALARM OUT:1-, 2-	Connect two alarm output devices. (with alarm signal output is negative)	G	Ground
RS-485:+, -	RS-485 signal transmit (positive and negative)		

Connecting a Third-Party Device

The DC4301-IN can connect a third-party device through its RS-485 port in transparent mode. Just connect the RJ45 connector or a Phoenix terminal to the third-party device. For details about how to connect the serial cable, refer to *DVS/DC Cable Connection Guide*.

RS-232 Serial Cable Connection

As shown in Figure 2-8, connect the DC4301-IN to a serial device such as a PC through its RS-232 port. For details about how to connect the serial cable, refer to *DVS/DC Cable Connection Guide*.

Verifying the Installation

WARNING!

After the DC4301-IN is installed, verify the correctness of the installation to avoid bodily injury or equipment damage caused by incorrect cable connection.

- Check that the DC4301-IN is installed securely with all screws fixed tightly.
- Check that the DC4301-IN is grounded properly, and all cables are connected correctly and firmly.
- Check that the power supply voltage is stable.

Starting Up the DC4301-IN

After completing the installation, connect the power supply to start up the DC4301-IN. Check the operation status of the DC4301-IN according to Table 1-1.

3 Logging In to and Logging Out of the DC4301-IN

You can manage and maintain your DC4301-IN conveniently through web interfaces.

Before logging in to the DC4301-IN, ensure that:

- The DC4301-IN is operating normally.
- The client PC and the DC4301-IN can communicate with each other.
- The client PC is installed with Microsoft Internet Explorer 7.0 or higher version.
- No proxy is set for the IE browser on the client PC.

NOTE!

- Of the DC4301-IN, the default IP address is 192.168.0.14/24 and the default gateway address is 192.168.0.1.
- For your first login, use **admin** as both the username and password. We recommend you to change the default password by selecting **Device** > **Password** after your first login.

Follow the steps below to log in to the web interface of the DC4301-IN:

1. Launch the IE browser on the client PC, type the IP address of the DC4301-IN in the address bar and press **Enter**.
2. On the login page, type the username and password, and click **Login** to enter the Web interface.

NOTE!

- You can select a node in the navigation tree and then click a tab on the right pane to enter the corresponding configuration page.
- For information about initial configuration and other configurations, please click the **Help** in the navigation tree.

To log out of the DC4301-IN, click **Exit** in the navigation tree and confirm your operation.

4 Technical Specifications

Table 4-1 Technical specifications

Item	DC4301-IN
Video decoding standard	H.264
Audio decoding standard	G.711μ
Video decoding standard	1080P@25, 1080P@30, 1080I@50, 1080I@60, 720P@60, XGA@60, SXGA@60
Maximum video decoding frame rate	25 frames per second (1080P@25, 1080I@50) 30 frames per second (1080P@30, 1080I@60, SXGA@60) 60 frames per second (720P@60, XGA@60)
Physical dimensions (H × W × D)	40 ×189 × 270 mm (1.57 × 7.44 × 10.63 in.)
Weight	< 2 kg

Item		DC4301-IN
DC input voltage		12 VDC
Maximum consumption		12 W (with subcard) 10 W (without subcard)
EPON subcard	Transmit / Receive wavelength	Transmit wavelength: 1310 nm Receive wavelength: 1490 nm
	Saturated optical receive power	–3 dBm
	Receive sensitivity	–26 dBm
	Optical transmit power	–1 dBm to +4 dBm
Operating temperature		0°C to 60°C (32°F to 140°F)
Operating humidity (non-condensing)		5% to 95%
Storage temperature		–40°C to +70°C (–40°F to +158°F)
Storage humidity (non-condensing)		5% to 95%
Altitude		–60 to +4000 m (–196.85 to +13123.36 ft.)

WARNING!

If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, you might be required to take corrective actions.

5 Relationship Between Video Input Cards, Video Output Cards, Video Standards, and Display Device Ports

NOTE!

Table 5-1 describes only the relationship between subcards, video standards, and cable ports. For details about decoding support in various standards, refer to the section about adding a decoder in Central Server *Online Help*.

Table 5-1 Relationship between video input cards, video output cards, video standards, and display device ports

Video Input Subcard	Input Signal Cable	Input Standard	Video Output Subcard	Output Standard	Display Device Port
SDI	Standard HD-SDI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	VGA	720P@60 1080P@25 1080P@301 080I@50 1080I@60	YPbPr port
SDI	Standard HD-SDI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	VGA	XGA@60 SXGA@60	VGA port, RGBHV BNC

Video Input Subcard	Input Signal Cable	Input Standard	Video Output Subcard	Output Standard	Display Device Port
SDI	Standard HD-SDI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI	XGA@60 SXGA@60	DVI-D DVI-I
SDI	Standard HD-SDI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI port
HDMID	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	VGA	720P@60 1080P@25 1080P@301 080I@50 1080I@60	YPbPr port
HDMID	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	VGA	XGA@60 SXGA@60	VGA port, RGBHV BNC
HDMID	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI	XGA@60 SXGA@60	DVI-D DVI-I
HDMID	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI port
DVI	DVI VGA to DVI-I	XGA@60	VGA	XGA@60 SXGA@60	VGA port, RGBHV BNC

Video Input Subcard	Input Signal Cable	Input Standard	Video Output Subcard	Output Standard	Display Device Port
DVI	YPbPr to DVI-I	720P@60 1080P@25 1080P@301 080I@50 1080I@60	VGA	720P@60 1080P@25 1080P@301 080I@50 1080I@60	YPbPr port
DVI	DVI VGA to DVI-I	XGA@60	HDMI	XGA@60 SXGA@60	DVI-D DVI-I
DVI	YPbPr to DVI-I	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI	720P@60 1080P@25 1080P@301 080I@50 1080I@60	HDMI port

BOM: 3101C03G