



# HD-CTL-101

## 8K Smart Display Controller with HDMI<sup>®</sup> connectivity

Product Manual

Crestron Electronics, Inc.

The original language version of this document is U.S. English.  
All other languages are a translation of the original document.

**Regulatory Model:** M202116001

Crestron product development software is licensed to Crestron dealers and Crestron Service Providers (CSPs) under a limited nonexclusive, nontransferable Software Development Tools License Agreement. Crestron product operating system software is licensed to Crestron dealers, CSPs, and end-users under a separate End-User License Agreement. Both of these Agreements can be found on the Crestron website at [www.crestron.com/legal/software\\_license\\_agreement](http://www.crestron.com/legal/software_license_agreement).

The product warranty can be found at [www.crestron.com/warranty](http://www.crestron.com/warranty).

The specific patents that cover Crestron products are listed online at [www.crestron.com/legal/patents](http://www.crestron.com/legal/patents).

Certain Crestron products contain open source software. For specific information, please visit [www.crestron.com/opensource](http://www.crestron.com/opensource).

Crestron, the Crestron logo, Crestron Home, and XiO Cloud are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Dolby, Dolby Atmos, and Dolby Digital are either trademarks or registered trademarks of Dolby Laboratories in the United States and/or other countries. HDMI, the HDMI logo, and High Definition Multimedia Interface are either trademarks or registered trademarks of HDMI Licensing LLC in the United States and/or other countries. Active Directory is a trademark or registered trademark of Microsoft Corporation in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography.

**HDMI**

©2023 Crestron Electronics, Inc.

# Contents

<b>Overview</b> .....	<b>6</b>
<b>Specifications</b> .....	<b>8</b>
Dimension Drawing .....	10
<b>Installation</b> .....	<b>11</b>
In the Box .....	11
Install the Device .....	12
Mount on a Wall .....	12
Mount Under a Table .....	13
Install in a Rack .....	14
Connect the Device .....	15
<b>Configuration</b> .....	<b>16</b>
Accessing the Web Configuration Interface .....	17
Action .....	18
Save Changes .....	18
Revert .....	18
Reboot .....	19
Restore .....	19
Update Firmware .....	19
Download Logs .....	20
Manage Certificates .....	20
Manage EDIDs .....	21
Manage Device Drivers .....	23
Download Configuration .....	24
Upload Configuration .....	24
Manage Schedule .....	25
Status .....	27
Device .....	27
Occupancy Sensor .....	28
Input/Output .....	29
Network .....	30
Control System .....	30
Settings .....	32
System Setup .....	33
Occupancy Sensor .....	36
Inputs .....	37
Outputs .....	38
Security .....	47
Current User .....	47

Users ..... 48  
Groups ..... 49  
802.1x Configuration ..... 52  
**Resources ..... 54**  
Crestron Support and Training ..... 54  
Programmer and Developer Resources ..... 54  
Product Certificates ..... 54



# Overview

The HD-CTL-101 is an 8K Smart Display Controller with HDMI® connectivity that provides a variety of options for controlling displays without a control processor. Ideal for unified communications, digital signage, and presentation spaces, the HD-CTL-101 can be configured to automatically power displays on and off based on schedule, room occupancy, or video sync detect. The HD-CTL-101 can also be utilized in residential systems to control a variety of devices such as garage doors and TV lifts.



- Device control options include CEC, RS-232, IR, Relay, and digital input ports
- Automatic or scheduled display power on/off
- 8K60 4:4:4 signal supported
- HDMI 2.1 and HDCP 2.3 compliance
- HDR10, HDR10+, and Dolby Vision® video formats
- Provides RS-232 COM port with software handshaking
- EDID management
- XiO Cloud® service support
- Crestron Home OS® support
- Crestron Driver support
- Enterprise-grade security
- Built-in web interface
- PoE (Power over Ethernet) network powered
- No programming or control processor required

## CEC Control

CEC (Consumer Electronics Control) can control the source and display devices via the HDMI connection, potentially eliminating the need for dedicated serial cables or IR emitters, as well as eliminating the need for a control system. CEC over the HDMI output can also enable the display devices to be turned on or off automatically.

## Device Control via RS-232, IR, Relay, and Digital Input Ports

The HD-CTL-101 includes built-in COM (RS-232), IR, relay, and digital input ports for control source devices and accessories.

## Built-In Web Interface

Full configuration of the HD-CTL-101 can be accomplished using the built-in web interface. To simplify system installation, the configuration of a single unit can be downloaded to a computer or mobile device and then uploaded to multiple HD-CTL-101 units.

## EDID Management

The HD-CTL-101 provides comprehensive management of EDID (Extended Display Identification Data) to ensure that every source is displayed at the optimal resolution and format. For applications requiring a custom configuration, the HD-CTL-101 enables assessment of the format and resolution capabilities of any device that is connected to the HDMI output. The HD-CTL-101 provides the ability to configure signals appropriately for the most desirable and predictable behavior.

## 8K60 4:4:4 and HDR Support

The HD-CTL-101 supports video resolutions up to 8K60 with 4:4:4 color sampling. HDR10, HDR10+, and Dolby Vision® are also supported.

## Enterprise-Grade Security

The HD-CTL-101 includes advanced security features and protocols. Using 802.1X authentication, Active Directory® credential management, PKI authentication, TLS, SSH, and HTTPS, the HD-CTL-101 provides a true enterprise-grade AV switcher.

## XiO Cloud® Service Support

The HD-CTL-101 is compatible with the XiO Cloud service, which is an IoT (Internet of Things) platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. Built on the Microsoft® Azure® software platform and using industry-leading Azure IoT Hub technology, the XiO Cloud service enables installers and IT managers to easily deploy and manage thousands of devices. Unlike other virtual machine-based cloud solutions, Azure services provide unlimited scalability to suit the ever-growing needs of an enterprise. For more information, visit [www.crestron.com/xiocloud](http://www.crestron.com/xiocloud).

# Specifications

Product specifications for the HD-CTL-101 are provided below.

## Video

---

<b>Input Signal Types</b>	HDMI with HDR10, HDR10+, Dolby Vision™, Deep Color, 8K60 4:4:4 support (DVI and Dual-Mode DisplayPort™ interface compatible)
<b>Output Signal Types</b>	HDMI with HDR10, HDR10+, Dolby Vision, Deep Color, and 8K60 4:4:4 support (DVI compatible)

## Audio

---

<b>Input Signal Types</b>	HDMI (Dual-Mode DisplayPort interface compatible)
<b>Formats</b>	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS HD® High Res, DTS-HD Master Audio, DTS: X®, LPCM up to 8 channels

## Connectors

---

<b>HDMI IN</b>	(1) 19-pin Type A connector, female; HDMI 2.1 compliant digital video/audio input (DVI and Dual-Mode DisplayPort interface compatible)
<b>HDMI OUT</b>	(1) 19-pin Type A connector, female; HDMI digital video/audio output (DVI compatible)
<b>IN</b>	(1) 2-pin 3.5 mm detachable terminal block; Digital input; Input Voltage Range: 0–24VDC; Logic Threshold: ≥2.0VDC 0/low, ≤1.1VDC 1/high; Input Impedance: 2.2k Ohms pulled up to 5V
<b>COM</b>	(1) 3-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port; Supports RS-232 up to 115.2k baud with software handshaking
<b>IR</b>	(1) 2-pin 3.5 mm detachable terminal block; IR output control port; Supports IR up to 60 kHz; <a href="#">IRP2</a> IR emitter probe sold separately
<b>RELAY 1-2</b>	(2) 2-pin detachable terminal blocks; Comprised of 2 normally open, isolated relays; Rated 1A, 30VAC/VDC; MOV arc suppression across contacts
<b>Ethernet 1</b>	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port; Provides network connectivity to secondary device



<b>Ethernet 2 PoE</b>	(1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port; PoE Class 3 powered device (PD) port, 8.2 W Maximum
<b>Ground</b>	(1) 6-32 screw, chassis ground lug

### Controls and Indicators

---

<b>PWR</b>	(1) LED; Amber indicates that the device is booting; Green indicates that the device is operational.
<b>HDMI IN</b>	(1) LED; Green indicates an HDMI signal; Amber indicates the device is ready for an HDMI signal.
<b>HDMI OUT</b>	(1) LED; Green indicates an HDMI signal; Amber indicates the device is ready for an HDMI signal.
<b>RESET</b>	(1) LED indicates the device is being reset.
<b>ETHERNET 1</b>	(2) LEDs on RJ-45 connector; Green indicates that a 100BASE-TX link is established; Flashing amber indicates Ethernet activity.
<b>ETHERNET 2 PoE</b>	(2) LEDs on RJ-45 connector; Green indicates that a 100BASE-TX link is established; Flashing amber indicates Ethernet activity.

### Environmental

---

<b>Temperature</b>	32° to 104°F (0° to 40°C)
<b>Humidity</b>	10% to 95% RH (noncondensing)

### Construction

---

<b>Chassis</b>	Metal, black finish, vented sides
<b>Mounting</b>	Surface mountable or attachment to a single rack rail

### Dimensions

---

<b>Height</b>	1.20 in. (31 mm)
<b>Width</b>	5.93 in. (151 mm)
<b>Depth</b>	4.09 in. (104 mm)

### Weight

---

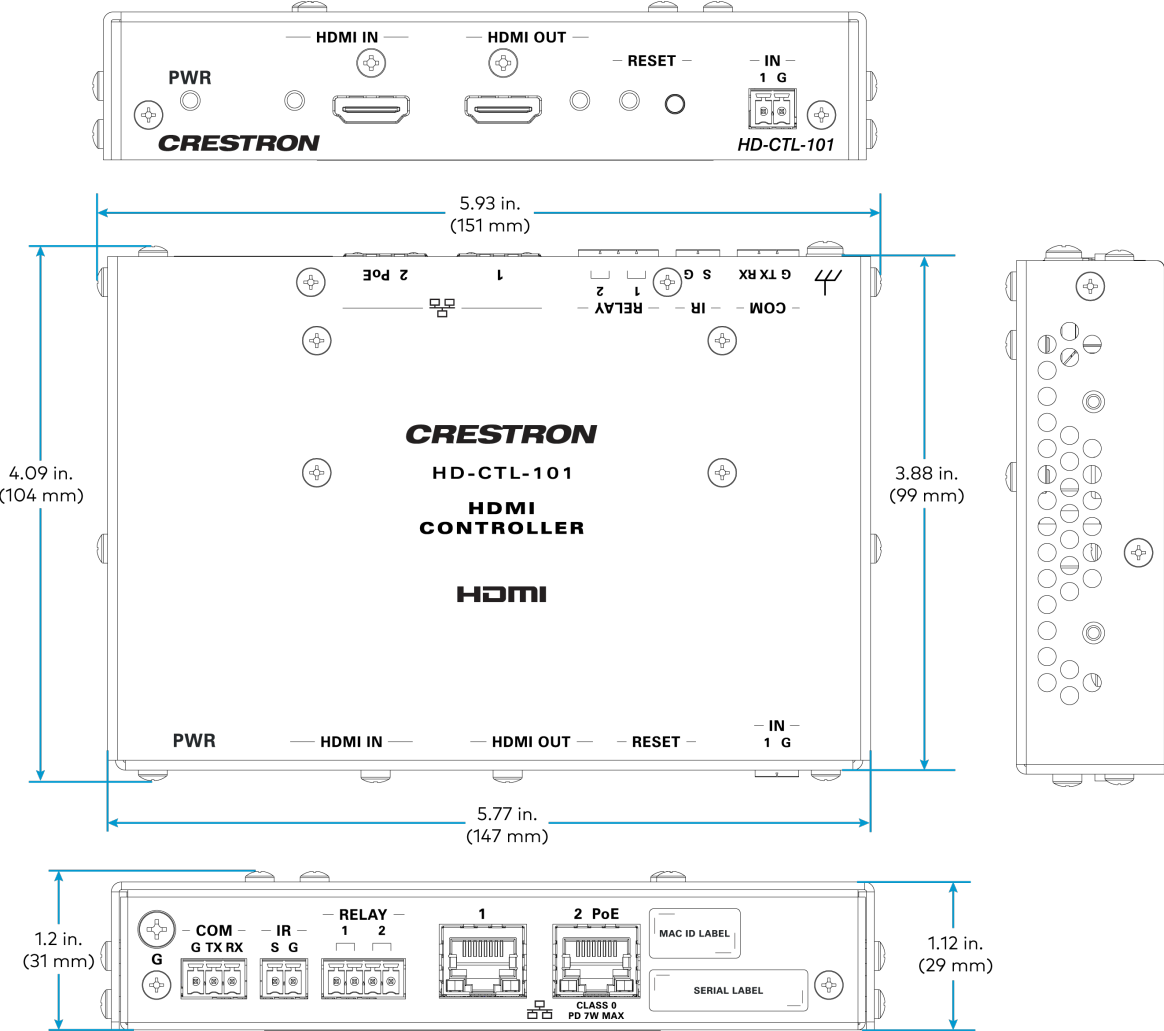
0.90 lb (.40 kg)

### Compliance

---

**Regulatory Model: M202116001**

# Dimension Drawing



# Installation

Refer to the sections below to install the HD-CTL-101.

## In the Box

Qty.	Description
1	HD-CTL-101, 8K Smart Display Controller with HDMI® connectivity
<b>Additional Items</b>	
2	Mounting bracket (2057072)
4	Screw, Philips, 04-40, 1/4 in. (2007158)
4	Wall anchor, plastic (2043585)
4	Screw, combo head, 06-32, 3/4 in. (2009211)
1	4-pin connector (2003576)
2	2-pin connector (2003574)
4	Washer, steel (2007664)

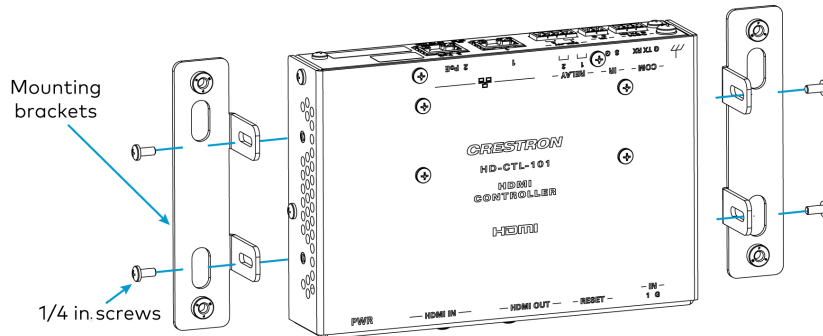
# Install the Device

The HD-CTL-101 can be mounted on a wall, under a table, or on a rack.

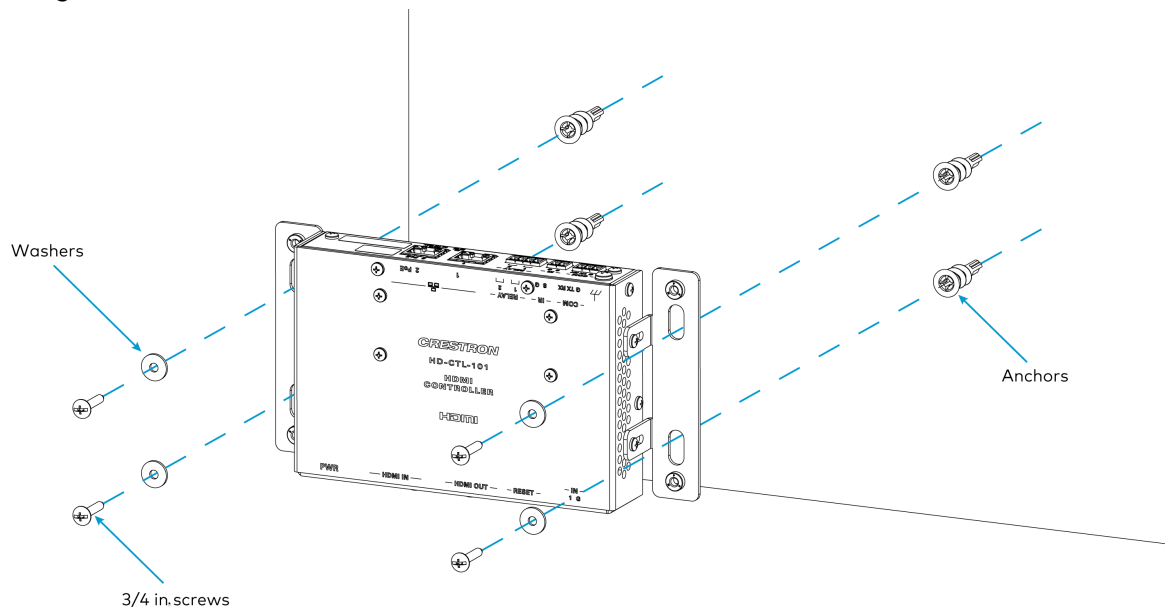
## Mount on a Wall

To mount the HD-CTL-101 on a wall, follow the instructions below.

1. Using the included 1/4 in. screws, attach the mounting brackets to the device.



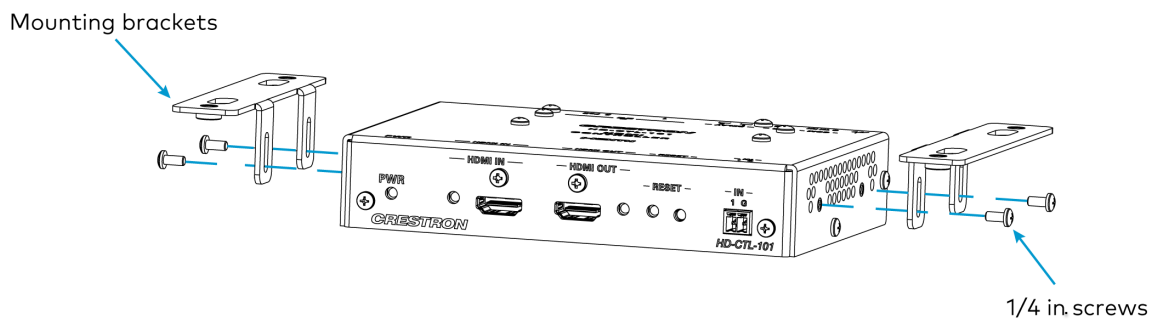
2. Using the included anchors and 3/4 in. screws, mount the device to the wall.



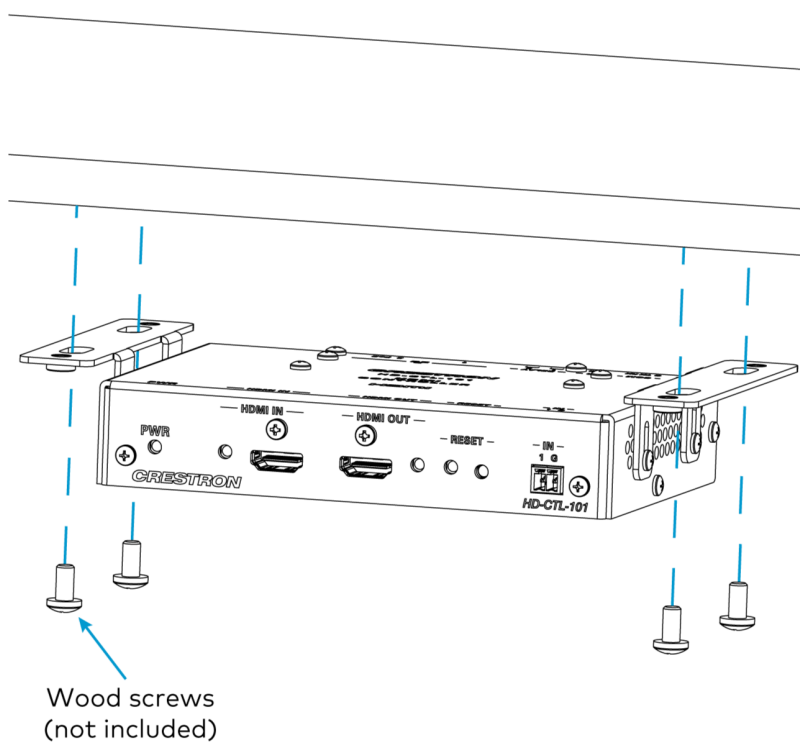
## Mount Under a Table

To mount the HD-CTL-101 under a table, follow the instructions below.

1. Using the included 1/4 in. screws, attach the mounting brackets to the device.



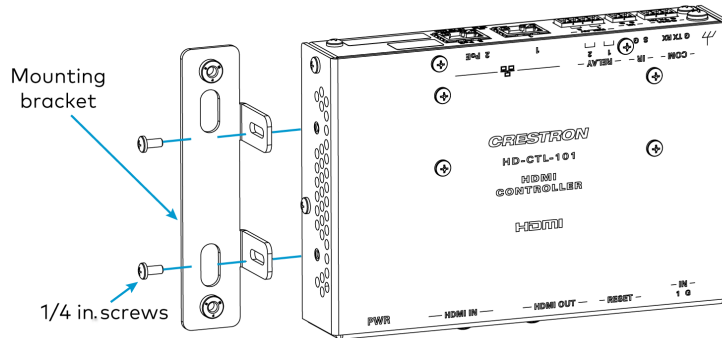
2. Using wood screws (not included), mount the device to the underside of the table.



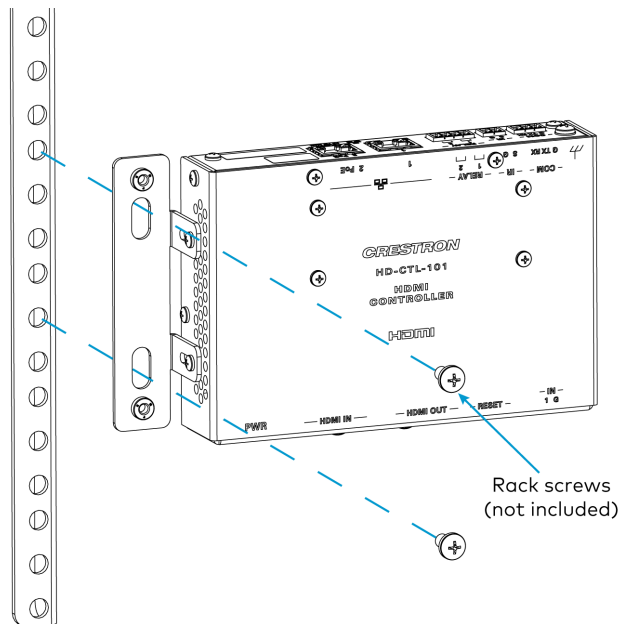
# Install in a Rack

To install the HD-CTL-101 in a rack, follow the instructions below.

1. Using the included 1/4 in. screws, attach a mounting bracket to the device.



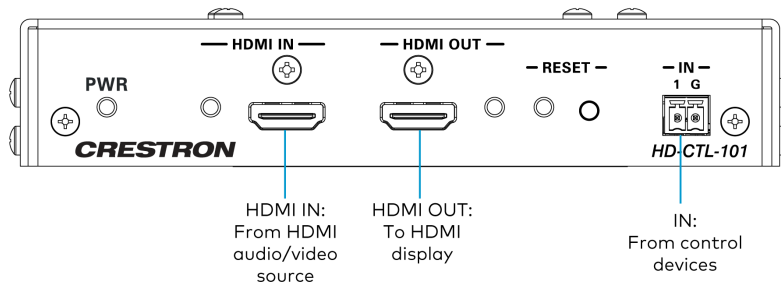
2. Using rack screws (not included), attach the HD-CTL-101 to a rack rail.



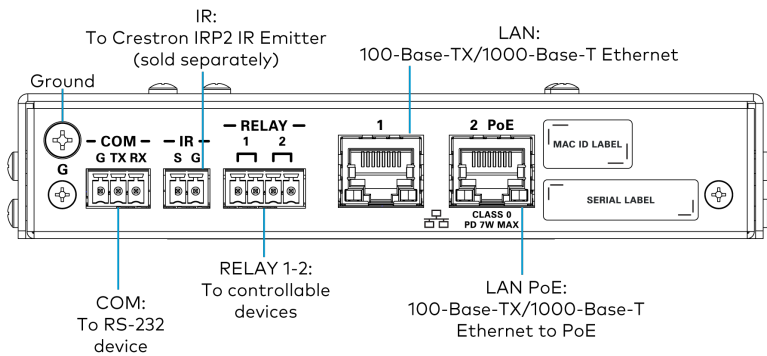
# Connect the Device

Make connections to the HD-CTL-101 as shown below.

## Front Panel Connections



## Rear Panel Connections



# Configuration

The HD-CTL-101 is configured through a web interface.

This section provides the following information:

- [Accessing the Web Configuration Interface on page 17](#)
- [Action on page 18](#)
- [Status on page 27](#)
- [Settings on page 32](#)
- [Security on page 47](#)
- [802.1x Configuration on page 52](#)



# Accessing the Web Configuration Interface

The first time the web configuration interface is accessed, the user will be asked to set a username and password. This username and password must be entered to enable access to the web configuration interface.

To access the web configuration interface:

1. Connect the HD-CTL-101 to the network.
2. Use the Device Discovery tool in Crestron Toolbox™ software to discover the HD-CTL-101 and its IP address on the network.
3. Select **Web Configuration** in Device Discovery or enter the IP address into a web browser.
4. Enter the username and password, then click **Sign In**.

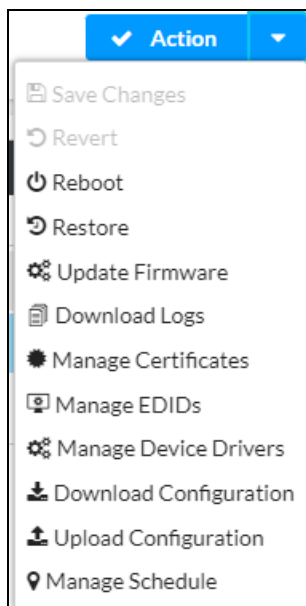


The screenshot shows a web interface titled "Device Administration". It features two input fields: "Username" and "Password". Below these fields is a blue "Sign In" button with a magnifying glass icon on the left. At the bottom of the page, there is a copyright notice: "© 2023 Crestron Electronics, Inc.", followed by two links: "Privacy Statement" and "Crestron Software End-User License Agreement".

# Action

The Action drop-down menu is displayed at the top right side of the interface and provides quick access to common device functionality:

- Save Changes
- Revert
- Reboot
- Restore
- Update Firmware
- Download Logs
- Manage Certificates
- Manage EDIDs
- Manage Device Drivers
- Download Configuration
- Upload Configuration
- Manage Schedule



## Save Changes

Select **Save Changes** to save any changes made to the configuration settings.

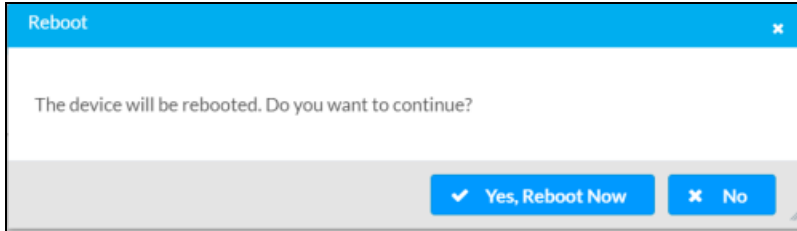
## Revert

Select **Revert** to revert the device back to the last saved configuration settings.

## Reboot

Certain changes to the settings may require the HD-CTL-101 to be rebooted to take effect. To reboot the device, follow the procedure below.

1. Select **Reboot** in the **Actions** drop-down menu. The Confirmation message box appears.



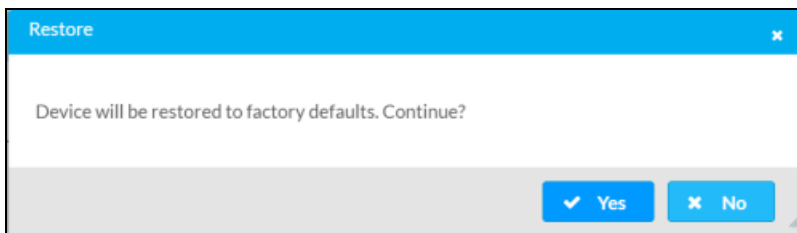
2. Select **Yes, Reboot Now** to reboot the device. The **Reboot** message box appears.
3. Wait for the device reboot to complete before attempting to reconnect to the device.

## Restore

To restore the HD-CTL-101 to factory defaults, follow the procedure below.

**NOTE:** When settings are restored, all settings, including the network settings, will revert to the factory default. If a static IP address is set, restoring the device to factory default settings will revert the IP address to the default DHCP mode.

1. Select **Restore** in the **Actions** drop-down menu.



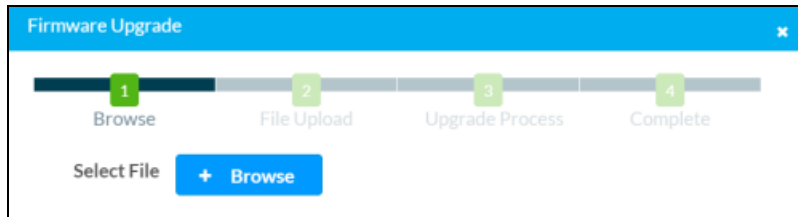
2. Select **Yes** in the Confirmation dialog to restore the HD-CTL-101 to factory settings. Select **No** to cancel the restore operation.

A dialog is displayed again, indicating that the restore process was successful and that the device rebooted.

## Update Firmware

To update firmware on the HD-CTL-101, follow the procedure below.

1. Select **Update Firmware** in the **Actions** drop-down menu.
2. In the **Firmware Upgrade** dialog, select **+ Browse**.



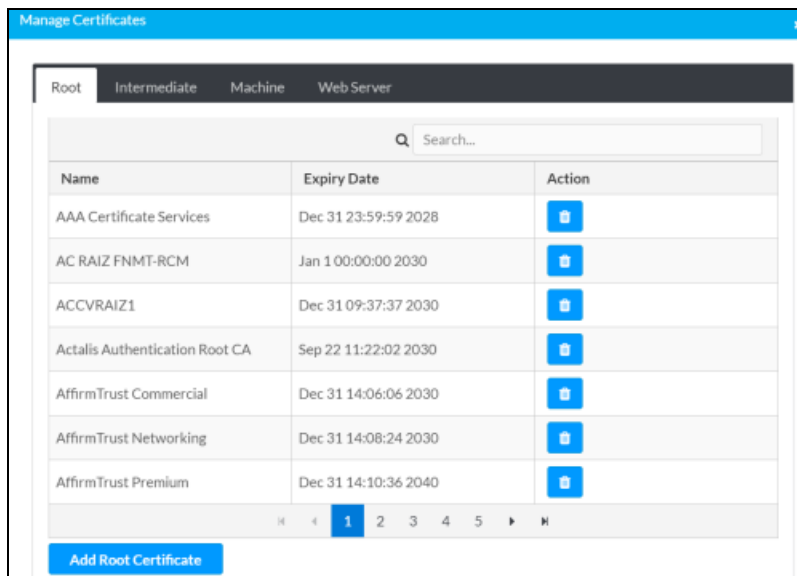
3. Locate and select the desired firmware file, and then select **Open**. The selected firmware file name is displayed in the **Firmware Upgrade** dialog.
4. Select **Load** and wait for the progress bar to complete.
5. Select **OK**. The device with new firmware can now be accessed.

## Download Logs

Select **Download Logs** in the **Actions** drop-down menu to download the device message logs for diagnostic purposes. The log file is downloaded to the Downloads folder of the PC.

## Manage Certificates

Use the **Manage Certificates** dialog to add, remove, and manage certificates used in 802.1x and other protected networks.



Click **Manage Certificates** in the **Actions** drop-down menu. The following certificate tabs are displayed:

- **Root:** The Root certificate is used by the HD-CTL-101 to validate the network's authentication server. The HD-CTL-101 has a variety of Root certificates, self-signed by trusted CAs (Certificate Authorities) preloaded into the device. Root certificates must be self-signed.
- **Intermediate:** The Intermediate store holds non self-signed certificates that are used to validate the authentication server. These certificates will be provided by the network administrator if the network does not use self-signed Root certificates.
- **Machine:** The machine certificate is an encrypted PFX file that is used by the authentication server to validate the identity of the HD-CTL-101. The machine certificate will be provided by the network administrator, along with the certificate password. For 802.1x, only one machine certificate can reside on the device.
- **Web Server:** The Web Server certificate is a digital file that contains information about the identity of the web server.

## Add Certificates


1. Select the corresponding certificate tab.
2. Select the **Add Root Certificate** button.
3. Select the **+ Browse** button.
4. Locate and select the file, and then select the **Open** button.

**NOTE:** If the certificate is a Machine Certificate, enter the password provided by the network administrator.

5. Select **OK**. This will add the certificate to the list box, displaying the file name and expiration date.

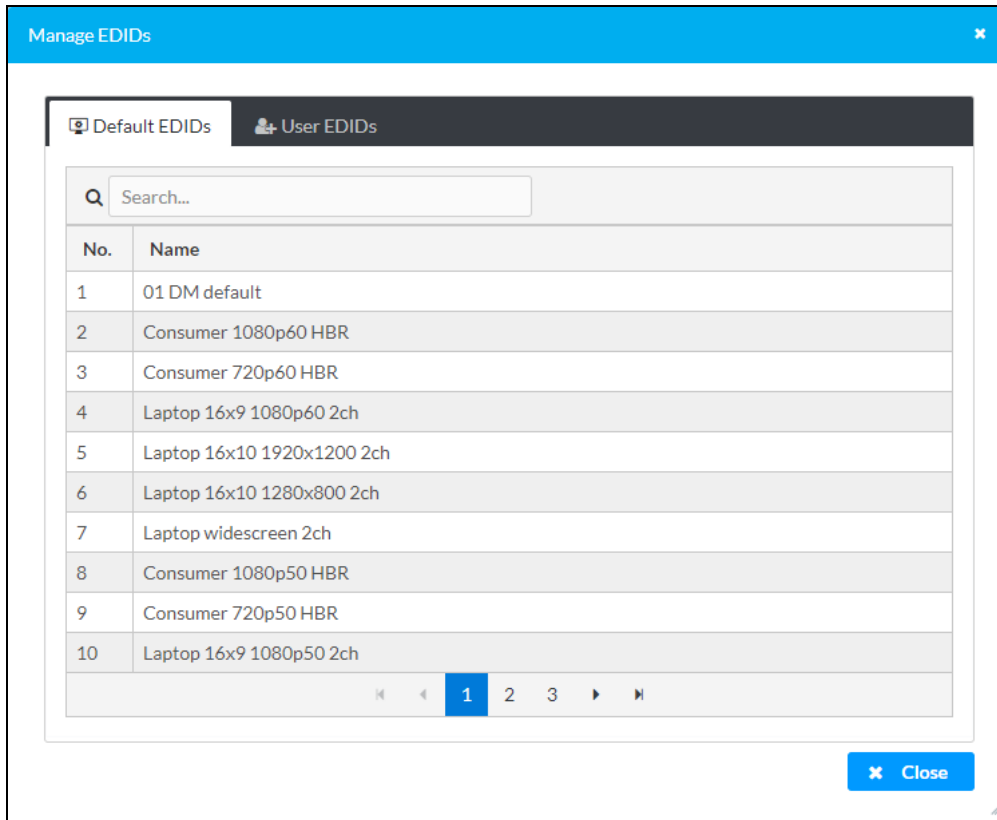
The certificate is now available for selection and can be loaded to the device.

## Delete Certificates

1. Select the corresponding certificate tab.
2. Select the trashcan button () in the **Actions** column to delete the certificate.
3. Select **Yes** when prompted to delete the certificate or **No** to cancel the deletion.

## Manage EDIDs

Select **Manage EDIDs** in the **Actions** drop-down menu to open the **EDID Management** dialog. The **EDID Management** dialog displays available built-in EDID files and allows loading of a custom EDID file.



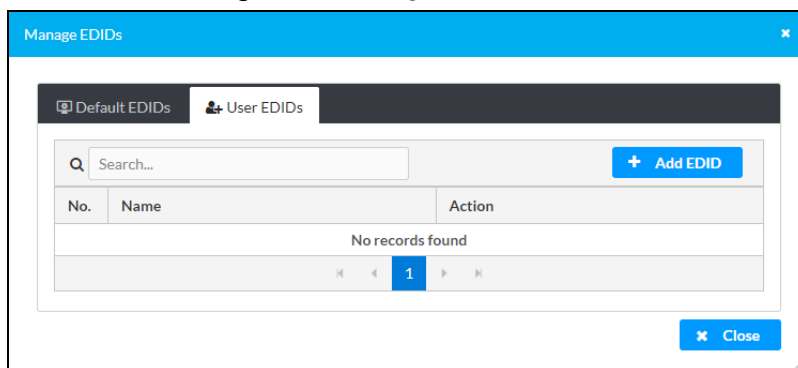
## Built-in EDIDs

Built-in EDIDs are displayed in the **Default EDIDs** tab of the EDID management dialog.

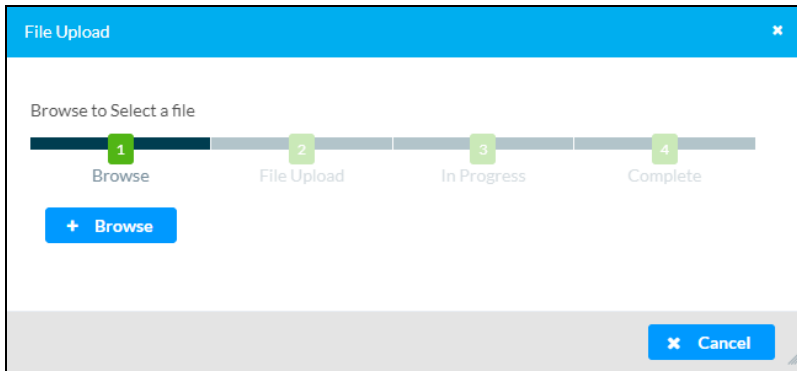
## User EDIDs

To add a custom EDID, follow the procedure below.

1. In the **EDID Management** dialog, select the **User EDIDs** tab and then select **+ Add EDID**.



2. Click the **+ Browse** button in the **File Upload** dialog.



3. Navigate to the desired EDID file (.cedid extension), select the file, and then select **Open**.
4. Select **Upload** and wait for the progress bar to complete.
5. Select **OK**. The EDID is now available for use on the HD-CTL-101.

**NOTE:** Any custom EDIDs will be listed (in alphabetical order) after the last built-in EDID.

## Delete a Custom EDID File

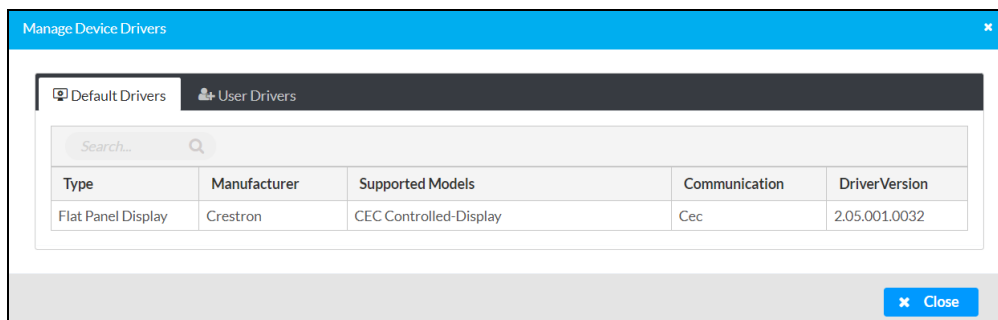
To delete a custom EDID, follow the procedure below.

1. Select the **User EDIDs** tab.
2. Click the trashcan button (🗑️) in the row of the custom EDID file to be deleted.
3. Click **Yes** in the Confirmation dialog to confirm the delete operation or click **No** to cancel the operation.

**NOTE:** Only custom EDID files that are not applied to an input can be deleted. Built-in EDID files cannot be deleted.

## Manage Device Drivers

Select **Manage Device Drivers** in the **Actions** drop-down menu to open the **Manage Device Drivers** dialog. The **Manage Device Drivers** dialog displays the default drivers and allows loading of user driver files.



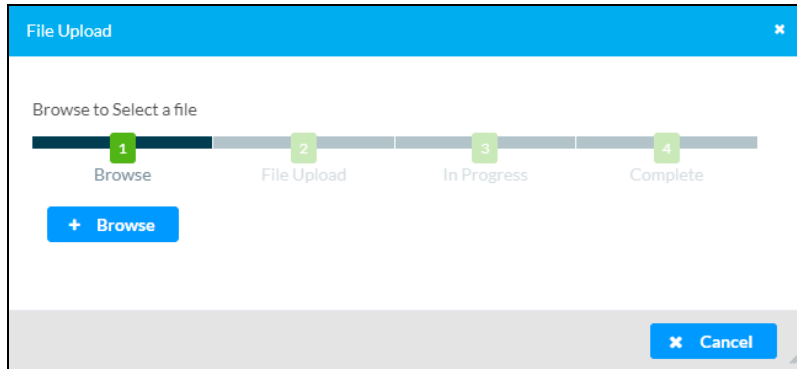
## User Drivers

Select the **User Drivers** tab to add or remove user drivers.

To add a user driver, select one of the following options:

- **+ Add Driver:** Upload a driver file from your computer.

1. Select **+ Browse**.



2. Navigate to the desired driver file, select the file, and then select **Open**.
3. Select **Upload** and wait for the progress bar to complete.
4. Select **OK**. The driver is now available for use on the HD-CTL-101.

- **Import from Cloud:** Import a driver from the cloud.

1. Browse through the available drivers or use the search field.
2. Select the button to the left of the desired driver.
3. Click **Add**. The driver is now available for use on the HD-CTL-101.

## Download Configuration

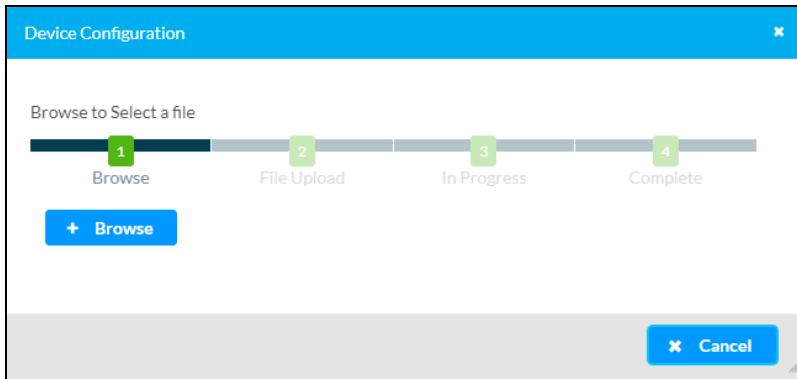
Select **Download Configuration** in the **Actions** drop-down menu to download the current configuration of the HD-CTL-101. The configuration file is downloaded to the Downloads folder of the PC.

## Upload Configuration

To upload a saved HD-CTL-101 configuration file, perform the following steps.



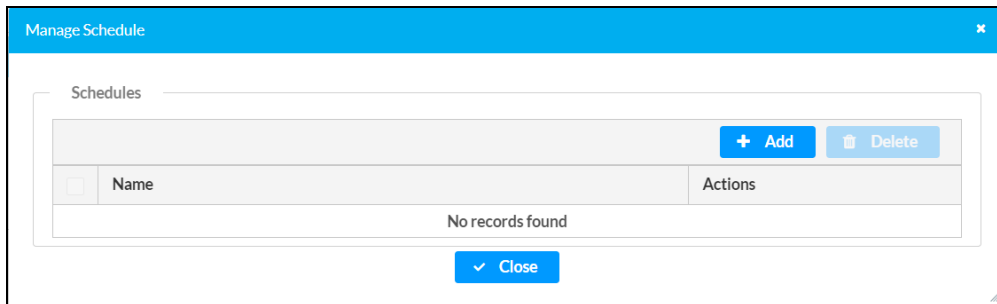
1. Select **Upload Configuration** in the **Actions** drop-down menu.
2. In the **Device Configuration** dialog, click **+ Browse**.



3. Locate and select the desired configuration file, and then click **Open**. The selected firmware file name is displayed in the **Device Configuration** dialog.
4. Select **Upload** and wait for the progress bar to complete.
5. Select **OK**. The device with new configuration can now be accessed.

## Manage Schedule

Select **Manage Schedule** in the **Actions** drop-down menu to create and manage schedules for the connect display. Select **Manage Schedule** to open the **Manage Schedule** dialog.



## Add Schedules

To add a new schedule for the connected display, follow the procedure below.

1. Select **+ Add** in the **Manage Schedule** dialog. This opens the **Add Schedule** dialog.

Enabled	Day	On Time	Off Time
<input checked="" type="checkbox"/>	Monday	00:00	23:59
<input checked="" type="checkbox"/>	Tuesday	00:00	23:59
<input checked="" type="checkbox"/>	Wednesday	00:00	23:59
<input checked="" type="checkbox"/>	Thursday	00:00	23:59
<input checked="" type="checkbox"/>	Friday	00:00	23:59
<input type="checkbox"/>	Saturday	00:00	23:59
<input type="checkbox"/>	Sunday	00:00	23:59

2. Enter a name for the schedule in the **Name** field.
3. For each day, slide the switch to the right to enable the schedule or to the left to disable the schedule.
4. For each enabled day, enter an **On Time** and an **Off Time** for the connected display.
5. Select **OK** to save the schedule or **Cancel** to discard it.

## Schedule Actions

With a schedule saved, the following actions become available in the **Manage Schedule** dialog.

Name	Actions
<input type="checkbox"/> Morning	<input type="checkbox"/> Edit <input type="checkbox"/> Duplicate
<input type="checkbox"/> Evening	<input type="checkbox"/> Edit <input type="checkbox"/> Duplicate

- **Delete:** To delete schedules, select the box to the left of each schedule to be deleted and then select **Delete**.
- **Edit:** Select **Edit** to adjust the days, hours, and name for the corresponding schedule.
- **Duplicate:** Select **Duplicate** to make a copy of the schedule.

# Status

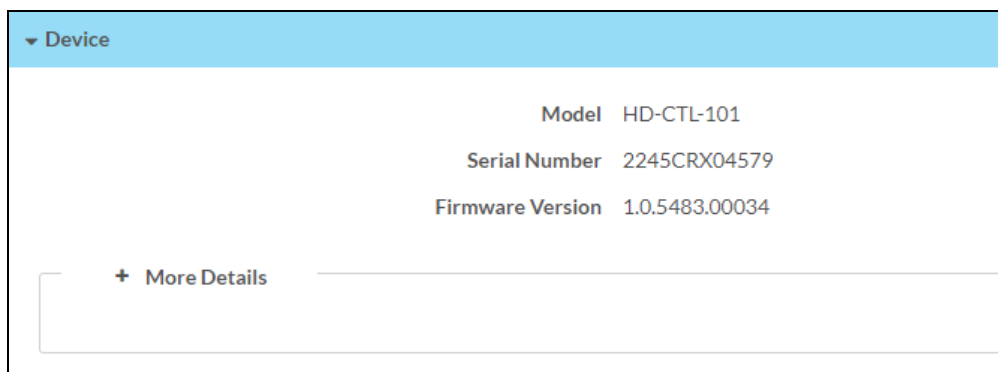
The **Status** tab is the first page displayed when starting the interface of the HD-CTL-101. It displays general information about the HD-CTL-101 (such as Model Name, Serial Number, and Firmware Version), occupancy sensors, current network settings (such as Host Name and IP Address, etc.), input and output ports, as well as information about the connection to the control system.

The Status tab can be accessed at any time by clicking the **Status** tab.



## Device

The Device section displays the **Model**, **Serial Number**, and **Firmware Version** of the HD-CTL-101.



Select **+ More Details** to review additional information about the HD-CTL-101.

More Details

HD-CTL-101	1.0.5483.00034
Build	Mar 15 2023 (496170)
Updater	1.0.5483.00034
Bootloader	0.01.01
Cab	2.9999.2993
Mono	6.12.0.107
Python	3.8.2
CCUI Version	1.62.888627
XIOSDK	3.8.2
IoTSDK	1.9.1
Build time	23:06:51
Product ID	0x7200
Revision ID	0x0000
CPU ID	0x0000
PUF	1.0.5483.00034
MCU	1.5509.00017
Forced Auth Mode	True
FIPS Mode	True

## Occupancy Sensor

The **Occupancy Sensor** section displays information about connected Ethernet and digital occupancy sensors. Select **+ Ethernet Models** or **+ Digi-In Models** for information about the corresponding sensors.

Occupancy Sensor

- Ethernet Models

Name	Model	Serial Number	Firmware Version	Status	Occupancy
Occupancy Sensor 2	POE-OCC				

- Digi-In Models

Name	Digi-In Port
DigiInSensor2	01

### Ethernet Models

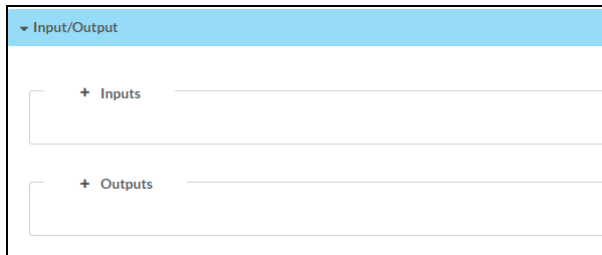
This section displays the name, model, serial number, firmware version, status, and occupancy state for any connected Ethernet occupancy sensor.

### Digi-In Models

This section displays the name and port number for any connected digital occupancy sensor.

# Input/Output

The **Input/Output** section displays information about the available inputs and outputs of the HD-CTL-101.



## Inputs

**Inputs** displays the following information:

- **Name:** Displays the name of the input source.
- **Sync Detected:** Displays **Yes** if connection is detected or **No** if connection is not detected.
- **Resolution:** Resolution when video with valid resolution is detected. If no video is detected, the reported resolution will be **0x0@0**.
- **Source HDCP:** Reports **HDCP 1.x** or **HDCP 2.x** when an HDCP source is connected. Reports **Non-HDCP** when a non-HDCP source is connected and reports **No Signal** when no source is connected.

Name	Sync Detected	Resolution	Source HDCP
HDMI Input 1	No	0x0@0	No Signal

## Outputs

**Outputs** displays the following information:

- **Name:** Displays the name of the output source.
- **Sink Connected:** Displays **Yes** if connection is detected or **No** if connection is not detected.
- **Resolution:** Displays detected resolution when video signal is being transmitted. In the event an HDMI cable is connected to the display/downstream device, but the device is turned off, the last detected resolution will be displayed until a new video signal is received. **0x0@0** is displayed when the video signal is not being transmitted.
- **Sink HDCP Capability:** Indicates HDCP support for **1.4** or **2.x**.
- **Disabled by HDCP:** Indicates if the video signal is disabled by HDCP (**Yes** or **No**).

Name	Sink Connected	Resolution	Sink HDCP Capability	Disabled by HDCP
HDMI Output 1	No	0x0@0	Not Connected	N/A

# Network

The **Network** section displays network-related information about the HD-CTL-101, including the Hostname, Domain Name, Primary Static DNS, and Secondary Static DNS.

▼ Network

Hostname HD-CTL-101-C4426818D95B

Domain Name CRESTRON.CRESTRON.com

Primary Static DNS 192.168.204.24(DHCP)

Secondary Static DNS 192.168.204.23(DHCP)

+ Adapter 1

## Adapter 1

The **Adapter 1** section displays additional network-related information about the HD-CTL-101, including DHCP status, IP Address, Subnet Mask, Default Gateway, Active Link status, and MAC Address.

- Adapter 1

DHCP Enabled Yes

IP Address 172.30.145.78

Subnet Mask 255.255.240.0

Default Gateway 172.30.144.1

Link Active Yes

MAC Address c4.42.68.18.d9.5b

# Control System

The Control System section displays information on a connected control system.

Control System

Encrypt Connection OFF

- IP Table

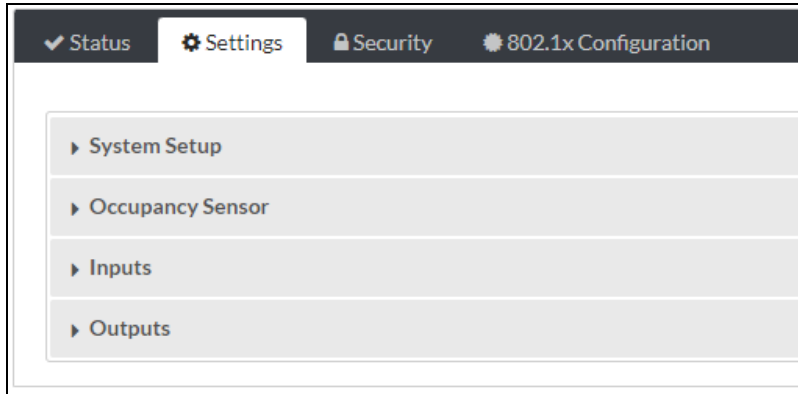
IP ID	Room ID	IP Address/Hostname	Type	Server Port	Connection	Status
No records found						

- **Encrypt Connection:** ON or OFF
- **IPID:** Reports the currently used IP ID of the HD-CTL-101.
- **IP Address/Hostname:** IP address of the control system.

- **Room ID:** Displays the **Room ID**
- **Status:** **OFFLINE** or **ONLINE**

# Settings

The **Settings** tab enables configuration of the HD-CTL-101 settings.



Information displayed in the **Settings** tab is organized into the following sections:

- [System Setup on page 33](#)
- [Occupancy Sensor on page 36](#)
- [Inputs on page 37](#)
- [Outputs on page 38](#)



# System Setup

The **System Setup** section displays information about the **Network**, **Cloud Settings**, **Auto Update**, **Date/Time**, and **Control System**.

## Network

The **Network** section displays network-related information about the HD-CTL-101, including the **Host Name**, **Domain**, **Primary Static DNS**, **Secondary Static DNS**, **DHCP** status, **IP Address**, **Subnet Mask**, and **Default Gateway**.

The screenshot shows the 'System Setup' interface with the 'Network' tab selected. Under 'Adapter 1', the following fields are visible:

Hostname *	HD-CTL-101-C4426818D95B
Domain	CRESTRON.CRESTRON.com
Primary Static DNS	192.168.204.24(DHCP)
Secondary Static DNS	192.168.204.23(DHCP)
DHCP	<input checked="" type="checkbox"/>
IP Address	172.30.145.78
Subnet Mask	255.255.240.0
Default Gateway	172.30.144.1

## Configuring DHCP

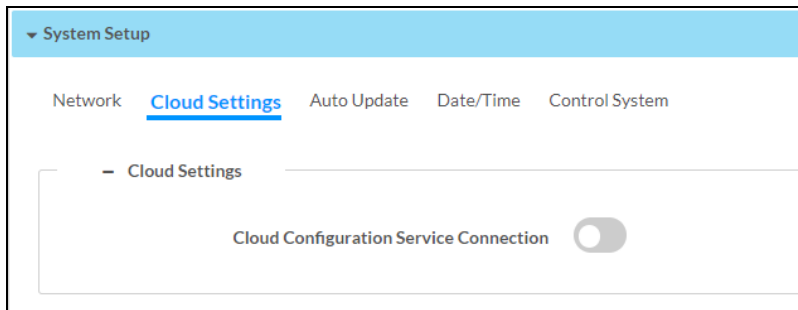
Set the **DHCP** slider to enabled (right) or disabled (left) to specify whether the IP address of the HD-CTL-101 is to be assigned by a DHCP (Dynamic Host Configuration Protocol) server.

- **Enabled:** When **DHCP** is enabled (default setting), the IP address of the HD-CTL-101 is automatically assigned by a DHCP server on the local area network (LAN) for a predetermined period of time.
- **Disabled:** When DHCP is disabled, manually enter information in the following fields:
  - **Primary Static DNS:** Enter a primary DNS IP address.
  - **Secondary Static DNS:** Enter a secondary DNS IP address.
  - **IP Address:** Enter a unique IP address for the HD-CTL-101.
  - **Subnet Mask:** Enter the subnet mask that is set on the network.
  - **Default Gateway:** Enter the IP address that is to be used as the network's gateway.

To save any new network entries, click **Save Changes**.

## Cloud Connection

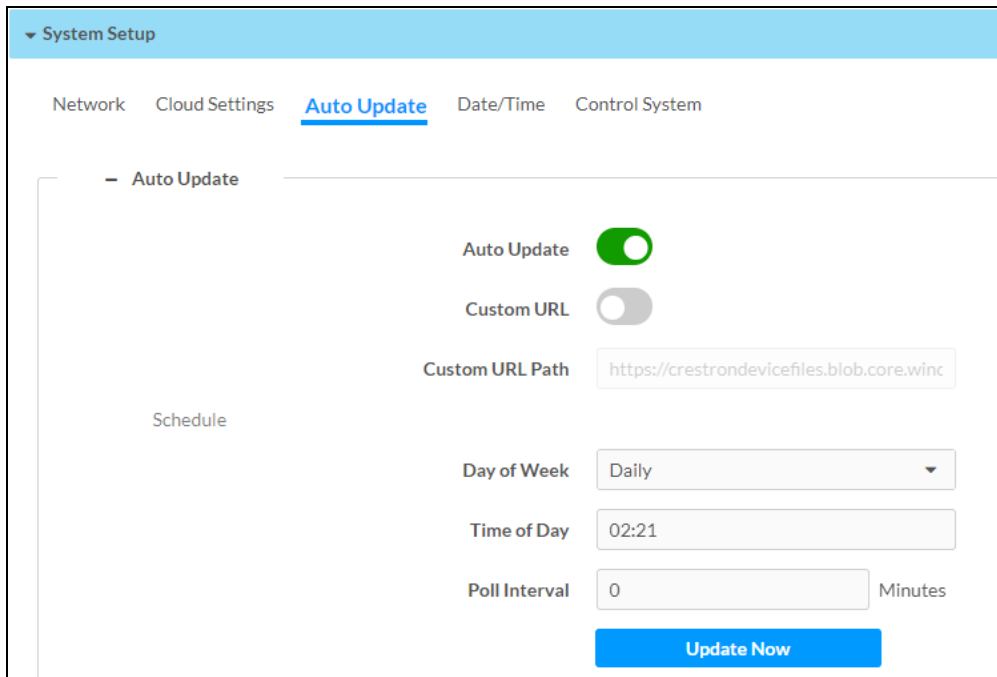
The **Cloud Settings** section provides functionality to enable or disable the cloud configuration service connection.



**Cloud Configuration Service Connection:** To disable the connection to the cloud server, move the **Cloud Configuration Service Connection** slider to the left position. To enable the connection, move the slider to the right position.

## Auto Update

The HD-CTL-101 can be automatically updated with the latest firmware at scheduled intervals.



1. Using the Crestron Auto Update Tool, generate a manifest file. The file is placed on an FTP (File Transfer Protocol) or SFTP (Secure File Transfer Protocol) server.
2. To enable auto update, move the **Auto Update** slider to the right position.

3. Define the URL to download the updates by performing one of the following:
  - a. Use the default URL to download the updates from the Crestron server.
  - b. Use a custom URL: To enable a custom URL, move the **Custom URL** slider to the right position. In the **Custom URL** Path text box, enter the path to the manifest file in the FTP or SFTP URL format.
4. Set a schedule for the automatic firmware update by doing either of the following:
  - a. Select the desired **Day of Week** and **Time of Day** (24-hour format) values.
  - b. Set the **Poll Interval** by entering a value from **60** to **65535** minutes. A value of **0** disables the **Poll Interval**.
5. Click **Save Changes**.

Clicking **Update Now** causes the firmware to be updated now.

## Date/Time

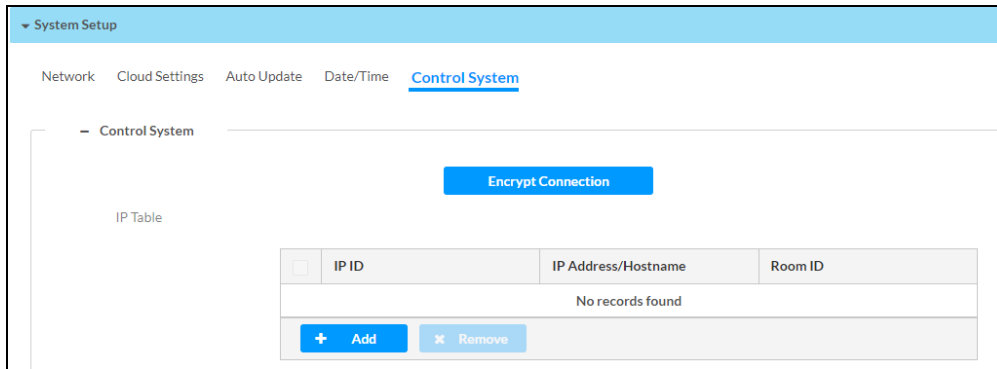
Use the **Date/Time** section to configure the date and time settings of the HD-CTL-101.

The screenshot shows the 'Date/Time' configuration page. At the top, there are navigation tabs: Network, Cloud Settings, Auto Update, **Date/Time**, and Control System. The main content area is titled 'Date/Time' and contains a 'Synchronization' section with a 'Time Synchronization' toggle switch turned on and a 'Synchronize Now' button. Below this is the 'NTP Time Servers' section, which contains a table with columns for Address, Port, Authentication Method, Authentication Key, and Key ID. One server is listed with Address 'pool.ntp.org', Port '123', and Authentication Method 'None'. There are '+ Add' and '- Remove' buttons below the table. The 'Configuration' section at the bottom has fields for 'Time Zone' (set to '(UTC-05:00) Eastern Time (US & Can)'), 'Date' (set to '04/28/2023'), and 'Time' (set to '14:12').

- **Time Synchronization:** Enable (right) or disable (left) time synchronization.
- **NTP Time Servers:** If **Time Synchronization** is enabled, enter the URL of the NTP or SNTP server.
- **Synchronize Now:** Select to perform time synchronization between the device's internal clock and the time server.
- **Time Zone:** Select the appropriate time zone.
- **Date:** Enter the current date.
- **Time:** Enter the current time in 24-hour format.

## Control System

Use the **Control System** section to configure a connection to a control system.

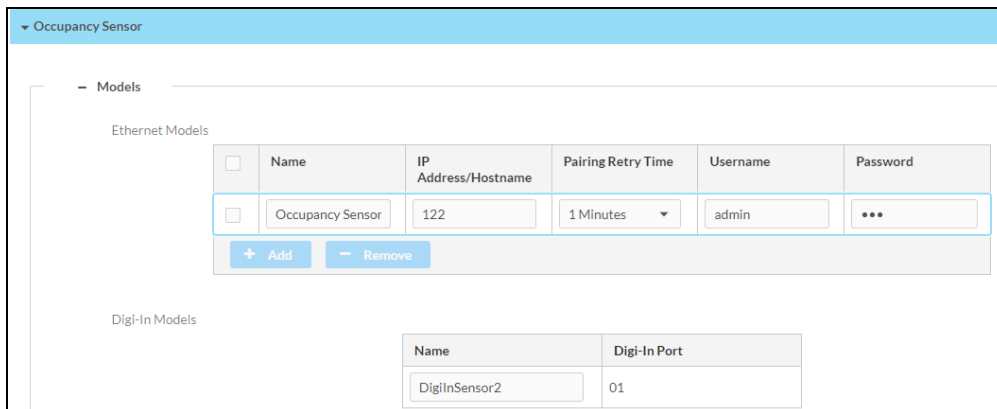


Perform the following steps:

1. Select **Encrypt Connection** to configure security settings. For details, see [Security on page 47](#).
2. Enter the IPID of the HD-CTL-101 in the **IPID** field.
3. Enter the IP address or hostname of the control system in the **IP Address/Hostname** field.
4. Enter the room ID in the **Room ID** field.
5. Select **Save Changes** to save the new entries or click **Revert** to revert to the previous settings.

## Occupancy Sensor

Use the **Occupancy Sensor** section to configure a connection to an occupancy sensor.



## Ethernet Models

To add and configure an Ethernet occupancy sensor, follow the instructions below.

1. Select **+ Add**.
2. Complete the following fields:
  - a. **Name**
  - b. **IP Address/Hostname**
  - c. **Username**
  - d. **Password**
3. Use the **Pairing Retry Time** drop-down list to select how quickly the devices will retry a pairing.
4. Select **Save Changes** to save the new entry or click **Revert** to revert to the previous settings.

To remove an Ethernet occupancy sensor, select it and then select - **Remove**.

## Digi-In Models

To configure a Digi-In occupancy sensor, follow the instructions below.

1. Physically connect the sensor to the HD-CTL-101.
2. Enter a name in the **Name** field.

## Inputs

The **Inputs** section can be used to configure the HDMI input settings of the HD-CTL-101 by renaming one or more inputs, changing and applying EDID to specific inputs or to all inputs at once (Global EDID), and enabling or disabling HDCP (High-bandwidth Digital Content Protection) on individual inputs.

▼ Inputs

- Global EDID (Autosaved)

Send EDID to all inputs 4K60 444 2CH Non-HDR ▼

- Inputs (Autosaved)

Name	Sync Detected	EDID	Resolution	HDCP Receiver Capability	Source HDCP	Actions
HDMI Input 1	No	DM Default 4k 30Hz 2ch	0x0@0	Auto	No Signal	<span style="background-color: #007bff; color: white; padding: 2px 5px; border-radius: 3px;">✎ Edit</span>

## Global EDID

In the **Send EDID to all inputs** drop-down list, select an EDID file from the list of built-in predefined EDID files.

The selected EDID is automatically sent to all inputs and appears in the **EDID** drop-down list in the **Inputs** section of the page.

## Inputs

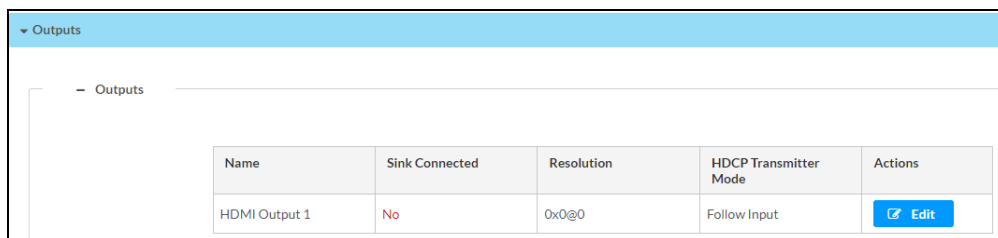
The **Inputs** section displays information and allows settings to be modified for available inputs.

- **Name:** Displays the name of the input. To modify the name of the input, select **Edit** and enter the new name in this field.
- **Sync Detected:** Indicates whether a valid video signal is detected at the corresponding input.
- **EDID:** Displays the selected predefined EDID file. To modify the existing setting, select **Edit** and select an EDID from the EDID drop-down menu.
- **Resolution:** The resolution when video with valid resolution is detected. If no video is detected, the reported resolution will be **0x0@0**.
- **HDCP Receiver Capability:** Specifies whether HDCP Support for this input will be **Disabled**, **Auto**, **HDCP 1.4**, or **HDCP 2.x**. To modify the existing setting, select **Edit** and select the desired option from the **HDCP Receiver Capability** drop-down menu.
- **Source HDCP:** Reports **HDCP 1.x** or **HDCP 2.x** when the HDCP source is connected. Reports **Non-HDCP** when a non-HDCP source is connected and reports **No Signal** when no source is connected.

Select **Save Changes** to save the changes or select **Revert** to revert to the previous settings without saving.

## Outputs

The **Outputs** section displays output information and allows settings to be modified for available outputs.



Name	Sink Connected	Resolution	HDCP Transmitter Mode	Actions
HDMI Output 1	No	0x0@0	Follow Input	<a href="#">Edit</a>

**Name:** Displays the name of the output.

**Sink Connected:** **Yes**, if connection is detected or **No**, if connection is not detected.

**Resolution:** The resolution when video with valid resolution is detected. If no video is detected, the reported resolution will be **0x0@0**.

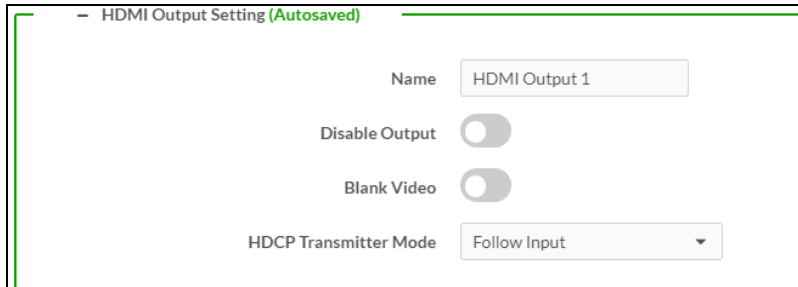
**HDCP Transmitter Mode:** Displays the selected **HDCP Transmitter Mode** value of the HDMI output.

### Edit Output

Select **Edit** to access the following sections: **HDMI Output Setting**, **Connected Display**, **Output Signal**, **Audio Settings**, and **Automatic Display Power**.

## HDMI Output Setting

The **HDMI Output Setting** section contains the following options:

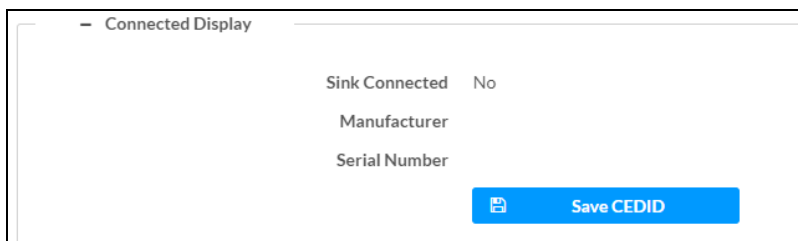


- **Name:** Enter the name of the HDMI output.
- **Disable Output:** Move the slider to enable (right) or disable (left) the audio and video outputs.
- **Blank Video:** Move the slider to enable (right) or disable (left) the video output.
- **HDCP Transmitter Mode:** Select the desired HDCP option from the drop-down list.
  - **Follow Input** (Default): Authenticates each time the input sync changes its state. The output will authenticate to the level reported at the input.
  - **Force Highest:** Authenticates to the highest level HDCP supported by the downstream device and always maintains sync.
  - **Never Authenticate:** The HDMI output will blank if the input is HDCP encrypted.

Select **Save Changes** to save the changes or select **Revert** to revert to the previous settings without saving.

## Connected Display

The **Connected Display** section displays the **Sink Connected**, **Manufacturer**, and **Serial Number** of the connected device.



Select **Save CEDID** to save the display's .cedid file to the Downloads folder of the host computer.

## Output Signal

The **Output Signal** section displays the **Transmitting**, **Resolution**, and **Disabled by HDCP** details of the output signal.



## Audio Settings

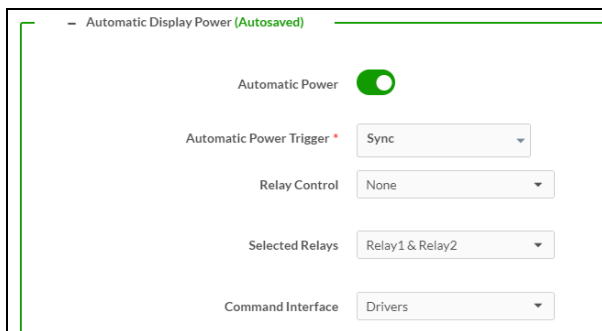
The **Audio Settings** section allows muting of the HDMI output.



Move the **HDMI Mute** slider to the right to mute the audio output or to the left to unmute.

## Automatic Display Power

The **Automatic Display Power** allows the configuration of power settings for the connected display.



Move the **Automatic Power** slider to enable (right) or disable (left) automatic power settings for the connected display. When enabled, select the following settings:

- **Automatic Power Trigger:** Select one of the available triggers.
  - **Sync:** The display powers on when sync is detected.
  - **Occupancy:** The display powers on when occupancy is detected.
  - **Schedule:** The display powers on based on the selected schedules.



- **Relay Control:** Select an option for relay control.
  - **Latched/Interlocked:** Provides dual relay control as described below.
    - A Power Off (No Sync Detected) event will close relay 1 and open relay 2.
    - A Power On (Sync Detected) event will close relay 2 and open relay 1.
  - **Momentary:** Provides dual relay control. Both relay 1 and relay 2 are normally open.
    - A Power Off (No Sync Detected) event will close relay 1 for the duration specified by the **Output TimeOut** (see below) setting and then return it to an open state.
    - A Power On (Sync Detected) event will close relay 2 for the duration specified by the **Output TimeOut** (see below) setting and then return it to an open state.
- **Selected Relays:** Relay 1 and Relay 2 are always active and selected.
- **Command Interface:** Select the type of command interface from **Drivers, CEC, RS-232, or IR: Port 1**.

## Drivers

After selecting **Drivers** in the **Command Interface** drop-down list, the following options become available.

The screenshot shows a configuration window for the Drivers command interface. At the top, there is a 'Command Interface' dropdown menu set to 'Drivers'. Below it is a 'Select Driver' dropdown menu. Underneath is an 'Output Timeout' field with the value '5' and a 'Seconds' label. At the bottom, there are two sections: 'Power Off' and 'Power On', each with a light blue 'Test' button.

- **Select Driver:** Select a driver from the drop-down list.
- **Output Timeout:** Select **5, 10, 15, 30, 60, 90**, or a custom value in seconds.
- **Power Off:** Select **Test** to test the driver's power off command.
- **Power On:** Select **Test** to test the driver's power on command.

## CEC

After selecting **CEC** in the **Command Interface** drop-down list, the following options become available.

The screenshot displays a configuration panel for CEC. At the top, 'Command Interface' is set to 'CEC'. Below it, 'Command Format' is 'Hex', 'Command Terminator' is 'None', and 'Output Timeout' is '5 Seconds'. The 'Power Off' section has a 'Command' dropdown set to 'Power Off: RCP and SS' and a blue 'Test' button. The 'Power On' section has a 'Command' dropdown set to 'Power On: RCP and IVO' and a blue 'Test' button. The 'InputControl' section has a green toggle switch turned on, a 'Delay' dropdown set to '5 seconds', and a 'Command String' text input field with a blue 'Test' button below it.

- **Command Format:** Select **ASCII** or **Hex**.
- **Command Terminator:** Select **None**, **CR**, **LF**, or **CR\_LF**.
- **Output Timeout:** Select **5**, **10**, **15**, **30**, **60**, **90**, or a custom value in seconds.
- **Power Off Command:** Select **Power Off: RCP and SS**, **Power Off: RCP only**, **Power Off: SS only**, or **Custom** from the drop-drop list. If using a custom command, enter it in the **Command String** field. Click **Test** to test the command.
- **Power On Command:** Select **Power On: RCP and ICO**, **Power On: RCP**, **Power On: Image View On**, or **Custom** from the drop-down list. If using a custom command, enter it in the **Command String** field. Click **Test** to test the command.
- **Input Control:** Move the slider to enable (right) or disable (left) **Input Control**. If the Input Control is enabled, select the following settings:
  - **Delay:** Select the delay value from the drop-down list. Valid values are **0**, **3**, **5**, **7**, **10**, or **20** seconds.
  - **Command String:** Enter the command. Select **Test** to test the command.

## RS-232

After selecting **RS-232** in the **Command Interface** drop-down list, the following options become available.

The image shows a configuration interface for RS-232 port settings, organized into three sections: RS-232 Port Settings, Power Off, and Power On.

- RS-232 Port Settings:** This section contains several configuration options, each with a label and a dropdown menu:
  - Command Interface: RS-232
  - Command Format: Hex
  - Command Terminator: None
  - Output Timeout: 5 Seconds (with a blue up/down arrow icon)
  - Baud Rate: 9600
  - Hardware Flow Control: None
  - Data Bits: 8
  - Parity: None
  - Software Flow Control: None
  - Stop Bits: 1
- Power Off:** This section includes:
  - Command String: An empty text input field.
  - Test: A blue button with the text "Test".
- Power On:** This section includes:
  - Command String: An empty text input field.
  - Test: A blue button with the text "Test".
  - InputControl: A green toggle switch that is currently turned on.
  - Delay: 5 seconds (with a dropdown arrow).
  - Command String: An empty text input field.
  - Test: A blue button with the text "Test".

- **Command Format:** Select **ASCII** or **Hex**.
- **Command Terminator:** Select **None**, **CR**, **LF**, or **CR\_LF**.
- **Output Timeout:** Select **5**, **10**, **15**, **30**, **60**, **90**, or a custom value in seconds.
- **Baud Rate:** Select **3600**, **4800**, **7200**, **9600**, **14400**, **19200**, **28800**, **38400**, **57600**, or **115200**.
- **Hardware Flow Control:** Select **None**, **RTS**, **CTS**, or **RTS/CTS**.
- **Data Bits:** Select **7** or **8**.
- **Parity:** Select **None**, **Odd**, or **Even**.
- **Software Flow Control:** Select **None** or **XON/XOFF**.
- **Stop Bits:** Select **1** or **2**.
- **Power Off Command:** Select **Power Off: RCP and SS**, **Power Off: RCP only**, **Power Off: SS only**, or **Custom** from the drop-down list. If using a custom command, enter it in the **Command String** field. Click **Test** to test the command.
- **Power On Command:** Select **Power On: RCP and ICO**, **Power On: RCP**, **Power On: Image View On**, or **Custom** from the drop-down list. If using a custom command, enter it in the **Command String** field. Click **Test** to test the command.
- **Input Control:** Move the slider to enable (right) or disable (left) **Input Control**. If the Input Control is enabled, select the following settings:
  - **Delay:** Select the delay value from the drop-down list. Valid values are **0**, **3**, **5**, **7**, **10**, or **20** seconds.
  - **Command String:** Enter the command. Select **Test** to test the command.

## IR: Port 1

After selecting **IR: Port 1** in the **Command Interface** drop-down list, the following options become available.

The screenshot displays the IR: Port 1 control interface. At the top, the 'Command Interface' is set to 'IR: Port 1'. Below this, the 'Output Timeout' is set to 5 seconds. The 'File Name' is 'Series.ir', with 'Load IR File' and 'Delete IR File' buttons. A table of IR Commands is shown, with 10 rows and 2 columns: 'IR Code' and 'IR Command'. The commands listed are POWER\_ON, POWER\_OFF, POWER, HDMI\_1, HDMI\_2, HDMI\_3, HDMI\_4, COMP\_1, COMP\_2, and COMP\_3. Below the table, there are three sections for testing commands: 'Power Off', 'Power On', and 'InputControl'. Each section has a 'Command' dropdown menu, a 'Test' button, and a 'Delay' dropdown menu (set to 5 seconds). The 'InputControl' section also has a green toggle switch.

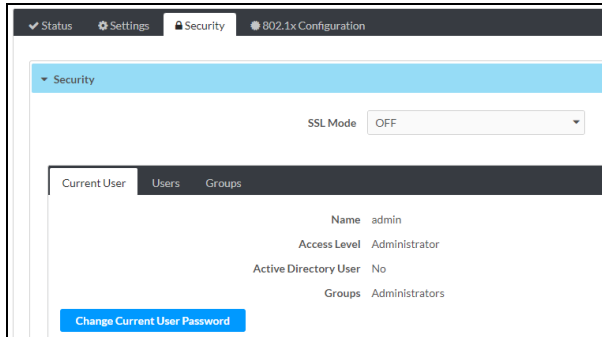
IR Code	IR Command
1	POWER_ON
2	POWER_OFF
3	POWER
4	HDMI_1
5	HDMI_2
6	HDMI_3
7	HDMI_4
8	COMP_1
9	COMP_2
10	COMP_3

- **Output Timeout:** Select **5, 10, 15, 30, 60, 90**, or a custom value in seconds.
- **IR Settings:** To load an IR file (extension .ir) to the HD-CTL-101, select **Load IR File**. To delete the file, select **Delete IR File**.
- **IR Commands:** This table displays all available IR commands in the loaded IR file.
- **Power Off Command:** Select a command from the drop-down list of all available IR commands. Click **Test** to test the command.
- **Power On Command:** Select a command from the drop-down list of all available IR commands. Click **Test** to test the command.

- **Input Control:** Move the slider to enable (right) or disable (left) **Input Control**. If the Input Control is enabled, select the following settings:
  - **Delay:** Select the delay value from the drop-down list. Valid values are **0, 3, 5, 7, 10,** or **20** seconds.
  - **Command String:** Enter the command. Select **Test** to test the command.

# Security

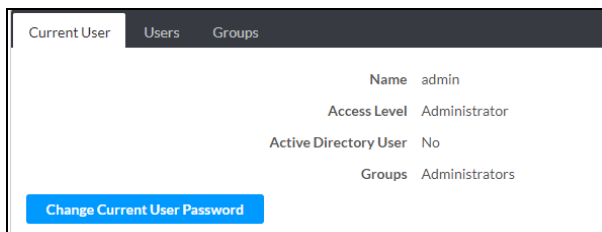
Select the **Security** tab to configure security for users and groups and to allow different levels of access to the functions of the HD-CTL-101.



Select **Encrypt and Validate, Encrypt,** or **OFF** in the **SSL Mode** drop-down menu to select an encryption mode.

## Current User

Select the Current User tab to view read-only information or to change the current user's password. To change the password, follow the procedure below.



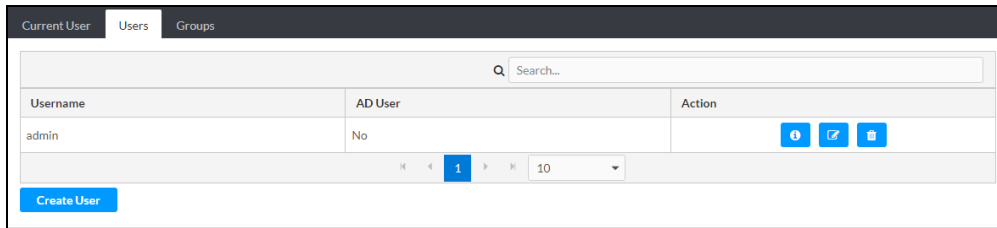
1. Select **Change Current User Password** to bring up the **Change Password** dialog.



2. Enter the current password.
3. Enter the new password in the **Password** field.
4. Re-enter the new password in the **Confirm Password** field.
5. Select **OK** to save or **Cancel** to cancel the changes.

# Users

Click the Users tab to view and edit user settings. The Users tab can be used to add or remove local and Active Directory users and preview information about users.



Use the **Search Users** field to enter search term(s) and display users that match the search criteria.




If users listed in the **Users** table span across multiple pages, navigate through the list of users by clicking a page number or by using the left or right arrows at the bottom of the **Users** pane to move forward or backward through the pages.

Each page can be set to display 5, 10, or 20 users by using the drop-down menu to the right of the navigation arrows.

Information about existing users is displayed in table format and the following details are provided for each user.

- **Username:** Displays the name of the user.
- **AD User:** Displays whether the user requires authentication using Active Directory.

Select the corresponding button in the Actions column to view detailed user information or delete a user.

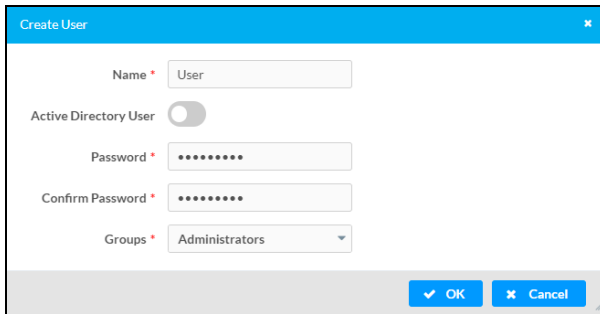
-  (User Details): Displays the user name, if they are an Active Directory user, and which Groups they are part of.
-  (Edit User): Allows the adjustment of all fields set during the Create User process.
-  (Delete User): Removes a user.

## Create a New User

To create a new user, follow the instructions below.



1. Select **Create User**.
2. In the **Create User** dialog, enter the following:



- a. Enter a user name in the **Name** field. Valid user names can consist of alphanumeric characters (letters a-z, A-Z, numbers 0-9), and the underscore "\_" character.
- b. Enter a password in the **Password** field.
- c. Re-enter the same password in the **Confirm Password** field.
- d. Assign the user's access level by selecting one or more groups from the **Groups** down-down list.

**NOTE:** The Active Directory User slider must be disabled (to the left).

3. Select **OK** to save or **Cancel** to close without saving.

## Add Active Directory User

Users cannot be created or removed from the Active Directory server, but access can be granted to an existing user in the Active Directory server.

To grant access to an Active Directory user, either add the user to a local group on the HD-CTL-101, or add the Active Directory group(s) that they are a member of to the HD-CTL-101.

To add an Active Directory user, follow the procedure below.

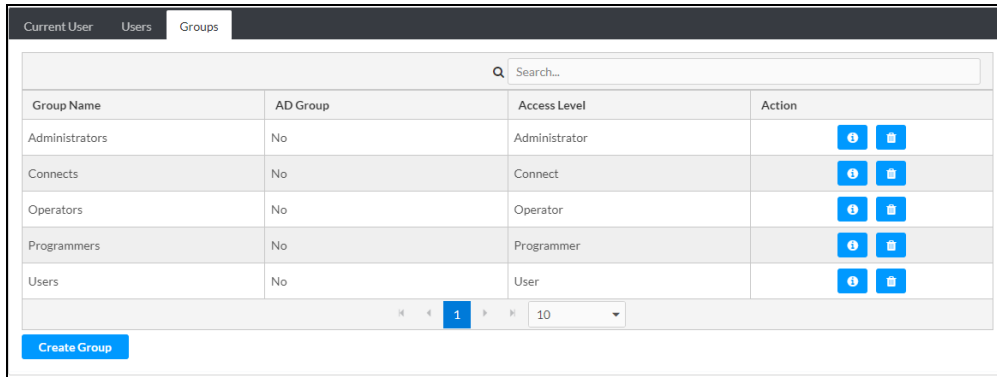
1. Select Create User.
2. In the Create User dialog, enter the following:
  - a. Enter a user name in the **Name** field. Valid user names can consist of alphanumeric characters (letters a-z, A-Z, numbers 0-9), and the underscore "\_" character.
  - b. Assign the user's access level by selecting one or more groups from the **Groups** drop-down list.

**NOTE:** The Active Directory User slider must be enabled (to the right).











## Groups

Select the **Groups** tab to view and edit group settings. The **Groups** tab can be used to add local and Active Directory groups, remove local and Active Directory groups, and preview information about a group.

Use the **Search Groups** field to enter search term(s) and display groups that match the search criteria.



The screenshot shows a web interface with a navigation bar at the top containing 'Current User', 'Users', and 'Groups'. Below the navigation bar is a search field labeled 'Search...'. The main content is a table with the following columns: 'Group Name', 'AD Group', 'Access Level', and 'Action'. The table lists five groups: Administrators, Connects, Operators, Programmers, and Users. Each group has a corresponding 'AD Group' value (all 'No') and an 'Access Level' (Administrator, Connect, Operator, Programmer, User). The 'Action' column contains two blue icons: an information icon (i) and a delete icon (trash). Below the table is a pagination control showing '1' of 10 items, with left and right arrows. A 'Create Group' button is located at the bottom left of the interface.



Group Name	AD Group	Access Level	Action
Administrators	No	Administrator	 
Connects	No	Connect	 
Operators	No	Operator	 
Programmers	No	Programmer	 
Users	No	User	 



If groups listed in the **Groups** table span across multiple pages, navigate through the groups by selecting a page number or by using the left or right arrows at the bottom of the **Groups** pane to move forward or backward through the pages.

Each page can be set to display 5, 10, or 20 groups by using the drop-down menu to the right of the navigation arrows.

Existing groups are displayed in a table and the following information is provided for each group:

- **Group Name:** Displays the name of the group.
- **AD Group:** Displays whether the group requires authentication using Active Directory.
- **Access Level:** Displays the predefined access level assigned to the group.

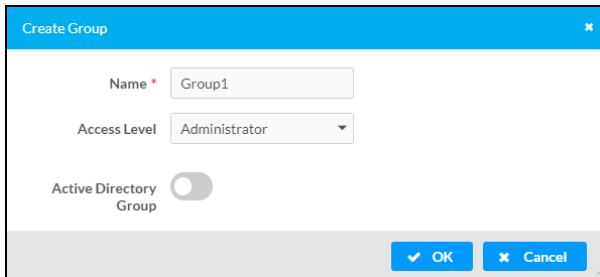
Select the corresponding button in the Actions column to view detailed group information () or delete () a group.

-  (Group Details): Displays the group name, access level, and if they are an Active Directory group.
-  (Delete Group): Removes a group. When a group is deleted, users in the group are not removed from the device or Active Directory server. However, because a user's access level is inherited from a group(s), users within the deleted group will lose access rights associated with the group.

## Create Local Group

To create a new local group, follow the procedure below.

1. Select **Create Group** to open the **Create Group** dialog.



2. In the **Create Group** dialog, perform the following:
  - a. Enter the group name in the **Name** field.
  - b. Assign the group access level by selecting a predefined access level from the **Access Level** drop-down list.

**NOTE:** The Active Directory User slider must be disabled (to the left).

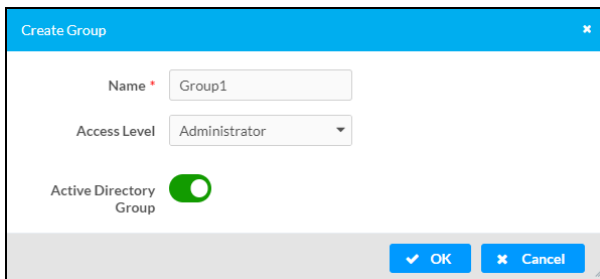
3. Select **OK** to save or **Cancel** to close without saving.

## Add Active Directory Group

A group cannot be created or removed from the Active Directory server, but access can be granted to an existing group in Active Directory. Once the group is added, all members of that group will have access to the HD-CTL-101.

To add an Active Directory group, follow the procedure below.

1. Select **Create Group** to open the **Create Group** dialog.



2. In the **Create Group** dialog, perform the following:
  - a. Enter the Active Directory group name in the **Name** field. Group names are case sensitive.
  - b. Assign the group access level by selecting a predefined access level from the **Access Level** drop-down list.

**NOTE:** The Active Directory User slider must be enabled (to the right).

3. Select **OK** to save or **Cancel** to close without saving.

# 802.1x Configuration

The HD-CTL-101 have built-in support for the 802.1X standard (an IEEE network standard designed to enhance the security of wireless and Ethernet LANs. The standard relies on the exchange of messages between the device and the network's host, or authentication server), allowing communication with the authentication server and access to protected corporate networks.

802.1x Configuration

IEEE 802.1x Authentication

Authentication Method: EAP MSCHAP V2- password

Domain:

Username:

Password:

Enable Authentication Server Validation

Select Trusted Certificate Authority(s)

- AAA Certificate Services
- AC RAIZ FNMT-RCM SERVIDORES SEGUROS
- AC RAIZ FNMT-RCM
- ACCVRAIZ1
- ANF Secure Server Root CA
- Actalis Authentication Root CA
- AffirmTrust Commercial
- AffirmTrust Networking
- AffirmTrust Premium ECC
- AffirmTrust Premium
- Amazon Root CA 1

To configure the HD-CTL-101 for 802.1x authentication, perform the following steps.

1. Move the **IEEE 802.1X Authentication** slider to enabled. This will enable all options in the 802.1X dialog.
2. Select the Authentication method: **EAP-TLS Certificate** or **EAP-MSCHAP V2 Password** according to the network administrator's requirement.
3. Perform one of the following:
  - Select **EAP-TLS Certificate**, then select **Action/Manage Certificates** to upload the required machine certificate. The machine certificate is an encrypted file that will be supplied by the network administrator, along with the certificate password.
  - Select **EAP-MSCHAP V2 Password**, then enter the **Username** and **Password** supplied by the network administrator into the **Username** and **Password** fields. This method does not require the use of a machine certificate, only the user name and password credentials.

4. If you enabled the **Enable Authentication Server Validation** option, this will enable the **Select Trusted Certificate Authoritie(s)** list box which contains signed Trusted Certificate Authorities (CAs) preloaded into the HD-CTL-101.

Select the check box next to each CA whose certificate can be used for server validation, as specified by the network administrator.

If the network does not use any of the listed certificates, the network administrator must provide a certificate, which must be uploaded manually via the **Manage Certificates** functionality.

5. If required, type the domain name of the network in the **Domain** field.
6. When the 802.1X settings are configured as desired, click **Save Changes** to save the changes to the device and reboot it. Click **Revert** to cancel any changes.

# Resources

The following resources are provided for the HD-CTL-101.

**NOTE:** You may need to provide your Crestron.com web account credentials when prompted to access some of the following resources.

## Crestron Support and Training

- [Crestron True Blue Support](#)
- [Crestron Resource Library](#)
- [Crestron Online Help \(OLH\)](#)
- [Crestron Training Institute \(CTI\) Portal](#)

## Programmer and Developer Resources

- [help.crestron.com](http://help.crestron.com): Provides help files for Crestron programming tools such as SIMPL, SIMPL#, and Crestron Toolbox™ software
- [developer.crestron.com](http://developer.crestron.com): Provides developer documentation for Crestron APIs, SDKs, and other development tools

## Product Certificates

To search for product certificates, refer to [support.crestron.com/app/certificates](http://support.crestron.com/app/certificates).

This page is intentionally left blank.

