



4x4 HDMI 2.0 4K HDR Matrix Switch with Cloud Control

User Manual



04-1197A

P/N: CE-H24W11-S1



Safety and Notice

The 4x4 HDMI 2.0 4K HDR Matrix Switch has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the 4x4 HDMI 2.0 4K HDR Matrix Switch should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit.
- Always unplug the power to the device before cleaning.



ESD CAUTION

Package contents

- 4x4 HDMI 2.0 4K HDR Matrix Switch
- Power adapter DC 5V / 4A
- IR Receiver
- IR Remote control
- Rack-mounting ear set
- User Manual

Thank You *for your purchase!*

Features

- HDMI2.0a compliant
- Supports 4K2K@60 4:4:4 8bits
- Supports HDR*, which is 4K2K@60 4:2:0 10bits
- Supports resolution downscaling from 4K2K to 1080P
- HDCP1.4 & HDCP 2.2 compliant
- Single-link 594MHz [18Gbps]
- Human body model — $\pm 15\text{kV}$ [air-gap discharge] & $\pm 8\text{kV}$ [contact discharge]
- Allows any source to be displayed on multiple displays at the same time
- Allows any HDMI display to view any HDMI source at any time
- Supports 7.1 channel digital audio
- Supports default HDMI EDID and learns the EDID of displays to matrix switcher
- The matrix switcher can switch every output channels from any HDMI inputs by Push button, IR remote control, RS-232, IP control, cloud & Echo control.
- Easy installation with rack-mounting
- Fast response time - 2~3 seconds for channel switch

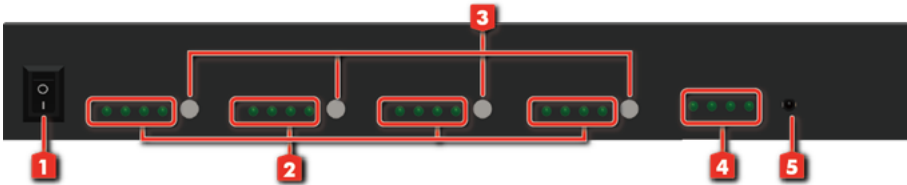
1. NOT supports

- (1) Resolution downscaling from 4K2K@60 4:2:2 to 1080P
- (2) Frame rate conversion
- (3) 4K2K@60 4:2:2 to 4K2K@60 4:2:0

2. Splitter can bypass 4K HDR data content, but can NOT process it and make HDR content 100% fit into 1080p

Layout

Front Panel



1. **Power Switch:**
2. **Selected Source Status LED:** When users use port channel push button, the indicator LED will show the selected source.
3. **Port 1-4 Channel Push Button:** Select input channel
4. **Source Status:** Input source detection LED
5. **IR SENSOR:** for receiving the IR commands from IR remote

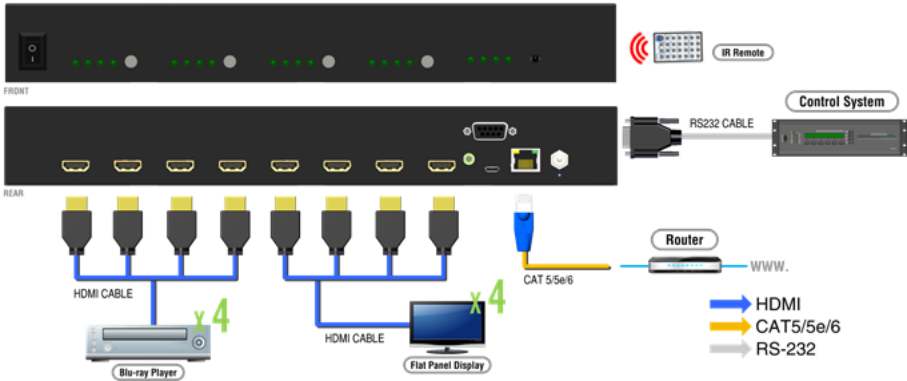
Rear Panel



6. **INPUT 1-4:** HDMI inputs
7. **OUTPUT 1-4:** HDMI outputs
8. **System IR Receiver:** Ext. IR receiver
9. **Micro USB:** Micro-USB port for F/W update
10. **Ethernet:** Ethernet control port
11. **Power Jack:** DC 5V/4A
12. **RS-232:** for software control and firmware update

* USB and RS-232 port cannot be used at the same time.

Application

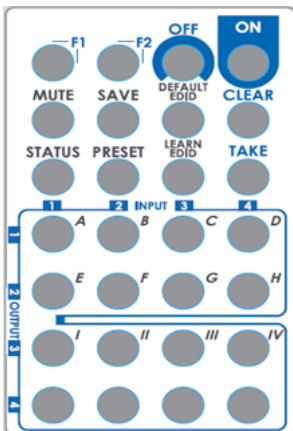


Operation Approach

Method A: Push-in Button

- Use Port 1-4 Channel Push Button to select the source
- Input1~4 can be selected in order

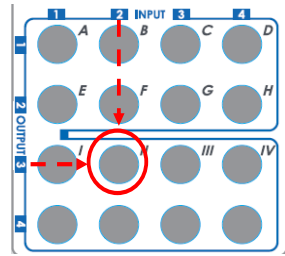
Method B: IR Remote Control



Button	Function
OFF	Standby mode
ON	Power on the matrix switcher
MUTE	Turn off output's video & audio
STATUS	Preset output status
SAVE	Save current mapping mode
PRESET	Preset mapping mode
DEFAULT EDID	Begin default EDID selection
LEARN EDID	Begin EDID learning from one output
CLEAR	Clear the previous IR operation procedure
TAKE	Trigger the previous setting
F1	Reserved
F2	Reserved

• IN/OUT Switch

Operation	Procedure
IN/OUT Switch	Push the button on the checkerboard to select input & output port
Ex: Input 2 To Output 3	Push the red circle button as below to select input 2 to output 3



• Example of function key

Operation	Procedure
Mute Output	Mute + A~D(Output 1~4) + Take
Ex: Mute Output 3	<ol style="list-style-type: none"> 1. Press "MUTE" button 2. Press number key "C" to select Output 3 3. Press "TAKE" button
Output Status	Status + A~D(Output 1~4) + CLEAR
Ex: Output 4 (Input 2)	<ol style="list-style-type: none"> 1. Press "STATUS" button 2. Press number key "D" to select Output 4 3. Press "CLEAR" button
Save Current Mapping	Save + A~H(1-8 storage site) + Take
Ex: Save current mapping to 5	<ol style="list-style-type: none"> 1. Press "SAVE" button 2. Press number key "E" to select the storage site 5 3. Press "TAKE" button
Preset Mapping	Preset + A~H(1-8 storage site) + Take
Ex: Preset saved mapping from 5	<ol style="list-style-type: none"> 1. Press "PRESET" button 2. Press number key "E" to select the storage site 5 3. Press "TAKE" button
Learn default EDID	Default EDID + A~H(1-8 default EDID) + I~IV(input 1~4) + Take
Ex: Default EDID 2 Input 3	<ol style="list-style-type: none"> 1. Press "DEFAULT EDID" button 2. Press number key "B" to select default EDID 2 3. Press number key "III" to select Input 3 4. Press "TAKE" button
Learn Output EDID	Learn + A~B(Output 1~2) + I~IV(input 1~4) + Take
Ex: Learn Output 4 Input 3	<ol style="list-style-type: none"> 1. Press "LEARN" button 2. Press number key "D" to select Output 4 3. Press number key "III" to select Input 3 4. Press "TAKE" button

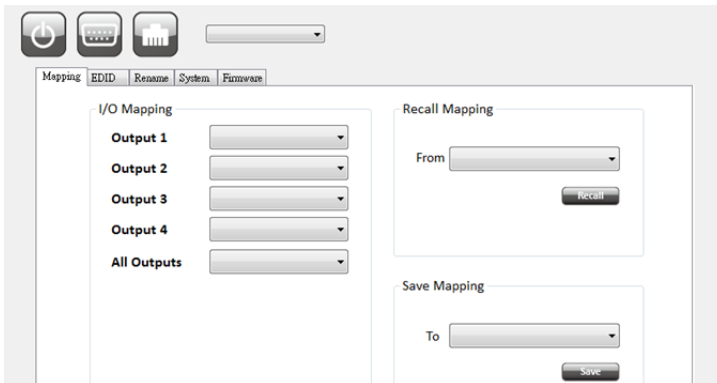
Method C: Software control through RS-232 port

1. Please go to SIIG's website. Use product number "CE-H24W11-S1" to find & download the software
2. Connect the Matrix via RS-232 cable (cable not included).
Baud rates: 115200
3. Run the control software and select the proper COM port from the drop down box, then click the serial port icon on the upper left corner of the application box to connect to the Matrix.



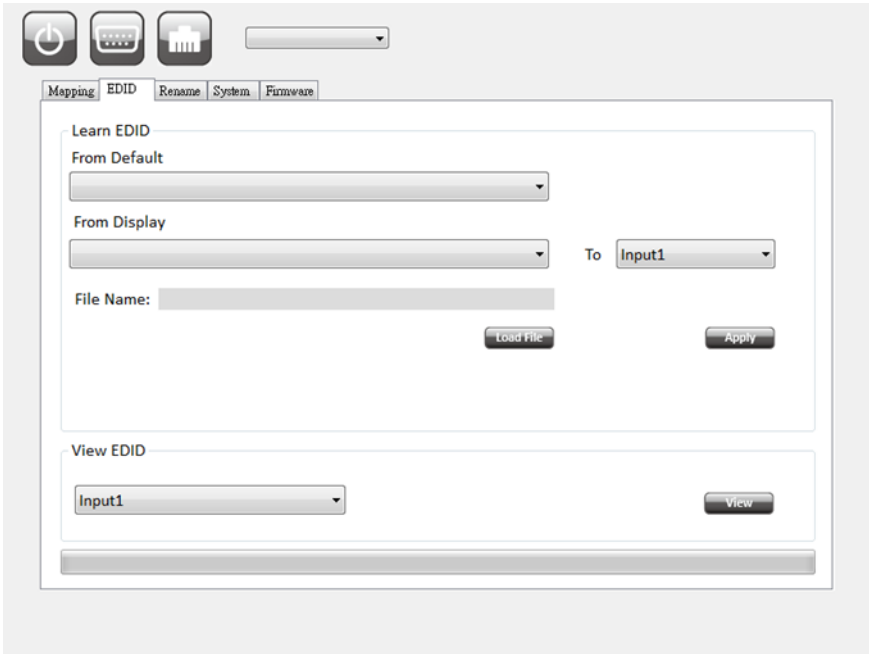
1	Power On / Standby mode
2	Control via RS-232
3	Control via Network
4	COM port selection

1. Mapping page



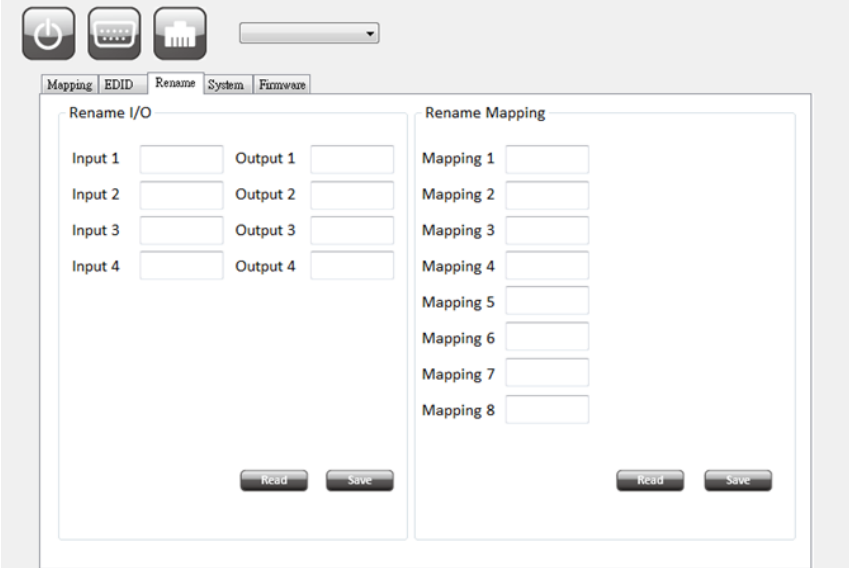
- **I/O Mapping:** Switch the input for each output
- **Recall Mapping:**
 - (1) Select the stored Mapping(1-8)
 - (2) Click "Recall" button to recall previous mapping which are saved
- **Save Mapping:**
 - (1) Select Mapping(1-8)
 - (2) Click "Save" button to save current mapping

2. EDID page



- **Learn EDID from Default to Input**
 - (1) Select Default EDID (1-17 Default EDID)
 - (2) Select designated Input
 - (3) Click “Apply” button to learn from default EDID
- **Learn EDID from Display to Input**
 - (1) Select display
 - (2) Select designated Input
 - (3) Click “Apply” button to learn from display EDID
- **Load EDID File to Input**
 - (1) Click “Load File” button to select the EDID file
 - (2) Select designated Input
 - (3) Click “Apply” button to load EDID File
- **View EDID**
 - (1) Select Input ,HDMI output or EDID file
 - (2) Click “View” button to read and analyze the EDID

3. Rename page

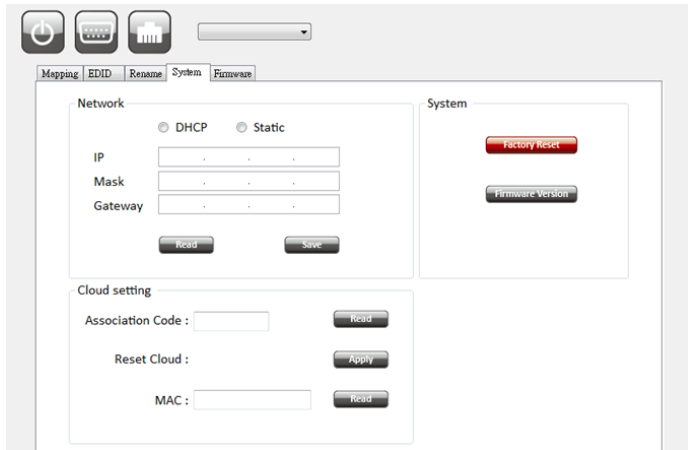


The screenshot shows the 'Rename' configuration page in the SIIG interface. At the top, there are icons for power, network, and a bar chart, followed by a dropdown menu. Below these are navigation tabs: 'Mapping', 'EDID', 'Rename', 'System', and 'Firmware'. The 'Rename' tab is selected. The page is divided into two main sections:

- Rename I/O:** This section contains four rows of input and output fields. Each row has an 'Input' field and an 'Output' field. Below these fields are 'Read' and 'Save' buttons.
- Rename Mapping:** This section contains eight rows of mapping fields, labeled 'Mapping 1' through 'Mapping 8'. Below these fields are 'Read' and 'Save' buttons.

- **Rename I/O:**
 - (1) Rename the Inputs
 - (2) Rename the Outputs
- **Rename Mapping:**
 - (1) Rename the Mappings

4. System page



Network-DHCP mode: For networks with DHCP server

- Select DHCP and click “Read” button to get the IP address Information

Network-Static mode

- Click Static and then key in the “IP”, “MASK”, “GATEWAY” information. After setting IP address, please click “Save” button to save IP address Information

“Save” Button: Save the IP address which is manually entered

“Read” Button *The default IP address is 192.168.1.70

- Select “Static” to read the IP address from the device

System-Factory Reset: To restore the factory default settings

Firmware Version

- To get the F/W version information

Cloud setting-Association Code

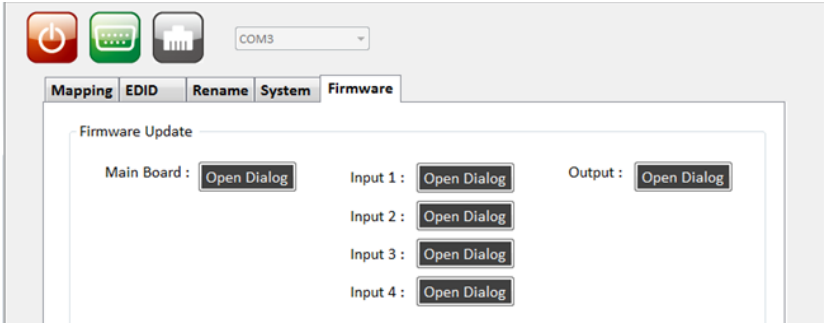
- To get an “association code”. The device can use this code to pair with cloud server.

Cloud-Reset Cloud

- To reset cloud after a successful pairing

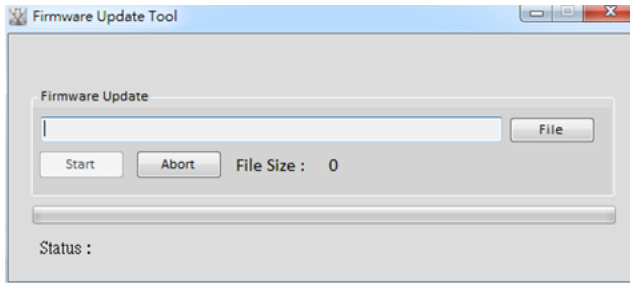
MAC: Read the device’s MAC address information

5. Firmware page



Main Board

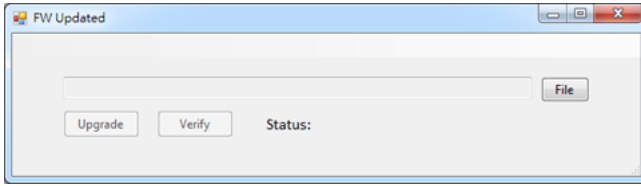
Using RS-232 cable connect the device and your PC



1. Before you start to update, please make sure you have secured the connection between your computer COM port and the device.
2. Click the "Open Dialog" button to open the firmware update window
3. Click the "File" button to select the file which you want to update
4. Click the "Start" button and firmware will start to update
5. After updating, please power cycle the device

Output

Using RS-232 cable connect the device and your PC



1. Click the “Open Dialog” button to open the FW Updated window.
2. Click the “File” button to select the firmware file
3. Click the “Upgrade” button will start to update
4. After updating, please power cycle the device

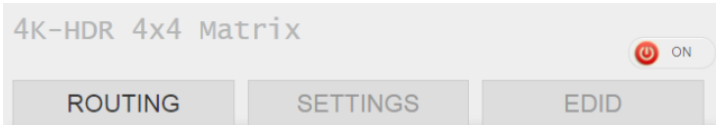
IN OUT

Using USB Micro-B cable connect the device and your PC

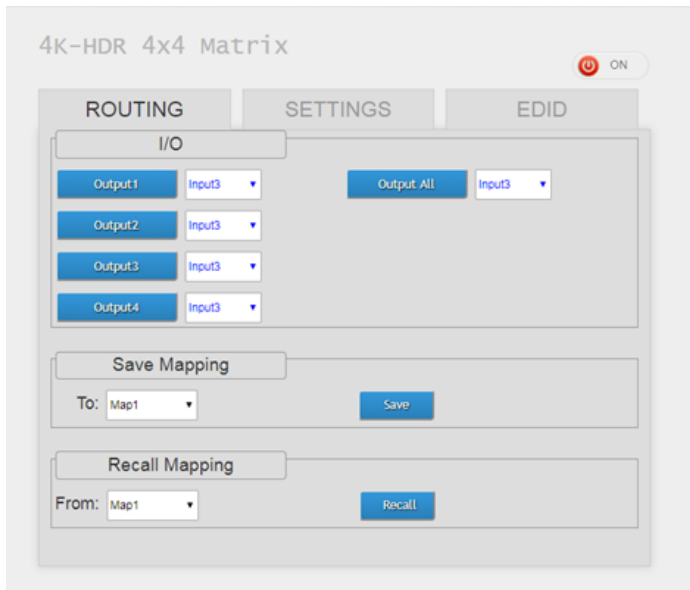
1. Click the “Open Dialog” button to open the update window
2. Open firmware update software and then device will start to update firmware automatically.
3. After update process is done, software will show “Success” message and then be closed automatically.
4. Click the “Open Dialog” button to update next input port
5. Plug and unplug the USB Micro-B cable. Repeat the step 2 ~ step 5, until finishing all the input port firmware update.

Method D: Control through Web

The default IP address: 192.168.1.70



I/O Routing Tab



Rename I/O, Mapping Tab

4K-HDR 4x4 Matrix ON

ROUTING | **SETTINGS** | **EDID**

Rename I/O

Input / Name	Output / Name
1 <input type="text" value="Input1"/>	1 <input type="text" value="Output1"/>
2 <input type="text" value="Input2"/>	2 <input type="text" value="Output2"/>
3 <input type="text" value="Input3"/>	3 <input type="text" value="Output3"/>
4 <input type="text" value="Input4"/>	4 <input type="text" value="Output4"/>

Rename Mapping

Configuration / Name	
1 <input type="text" value="Map1"/>	5 <input type="text" value="Map5"/>
2 <input type="text" value="Map2"/>	6 <input type="text" value="Map6"/>
3 <input type="text" value="Map3"/>	7 <input type="text" value="Map7"/>
4 <input type="text" value="Map4"/>	8 <input type="text" value="Map8"/>

EDID Tab

4K-HDR 4x4 Matrix ON

ROUTING | **SETTINGS** | **EDID**

Learn EDID From Default

From:

To:

Learn EDID From Display

From:

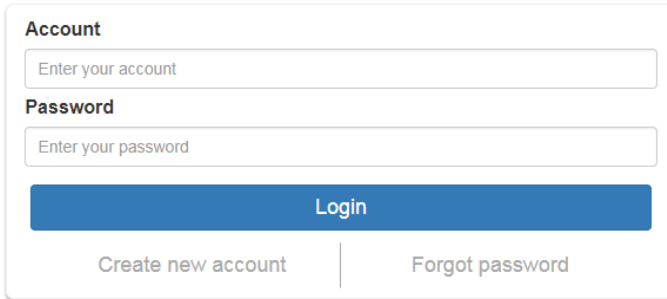
To:

Method E: Control through "intriCloud" on internet

Create Account

The first time you use the intriCloud service, please create a new account.

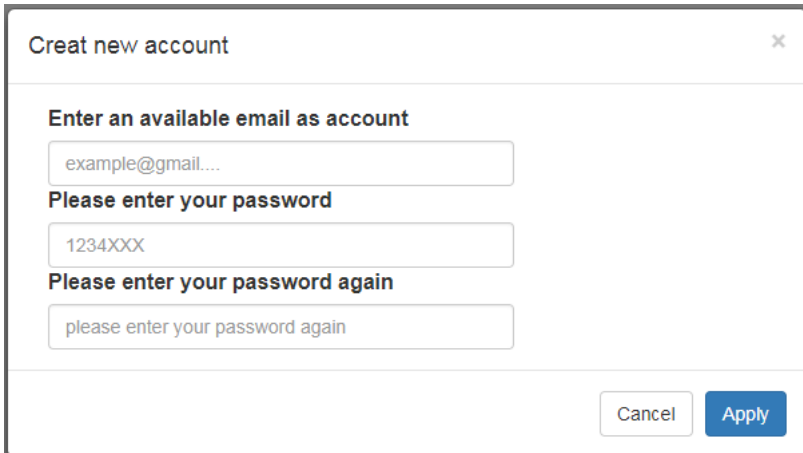
1. Access intriCloud (www.intri.cloud) and click "Create new account".



The screenshot shows a login form with the following elements:

- Account**: A text input field with the placeholder text "Enter your account".
- Password**: A text input field with the placeholder text "Enter your password".
- Login**: A prominent blue button.
- Create new account**: A link located below the Login button.
- Forgot password**: A link located to the right of the "Create new account" link.

2. The Registration page will pop up, please fill in your email and password information to create your private account.

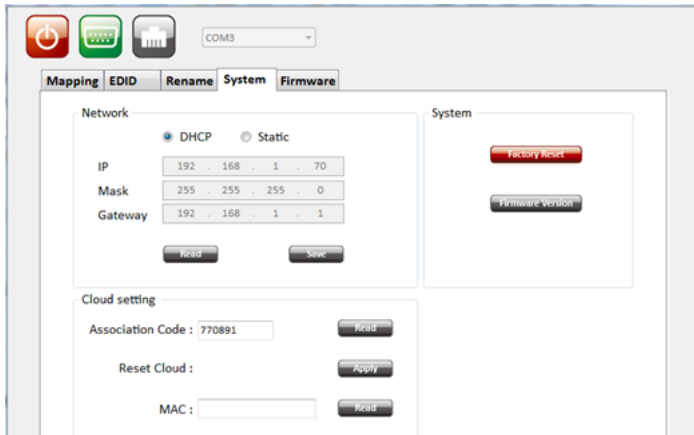


The screenshot shows a "Creat new account" pop-up window with the following elements:

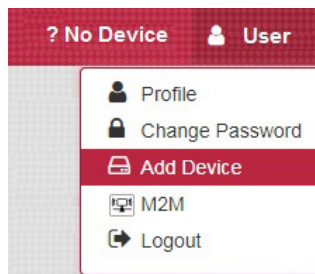
- Enter an available email as account**: A text input field containing "example@gmail...".
- Please enter your password**: A text input field containing "1234XXX".
- Please enter your password again**: A text input field containing "please enter your password again".
- Buttons**: "Cancel" and "Apply" buttons at the bottom right.

Add Device to intriCloud

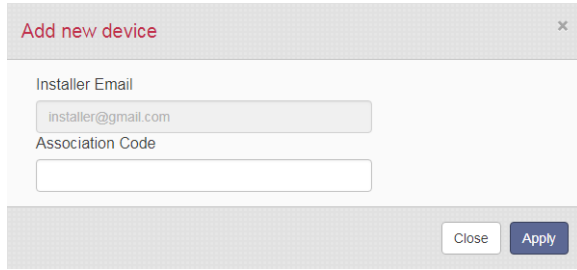
1. First, please make sure the Matrix is connected to your Ethernet with internet access.
2. Connect the Matrix to your PC via a RS-232 cable.
Confirm the status of software is connected
3. Click on Read to get an Association Code. Write down this code.



4. Access your intriCloud account or use intriCloud APP, then log in to your account. On the upper right corner, click **"Add Device"**.



5. Enter the Association code and click Apply for pairing with your Matrix.



Add new device ×

Installer Email

Association Code

Close Apply

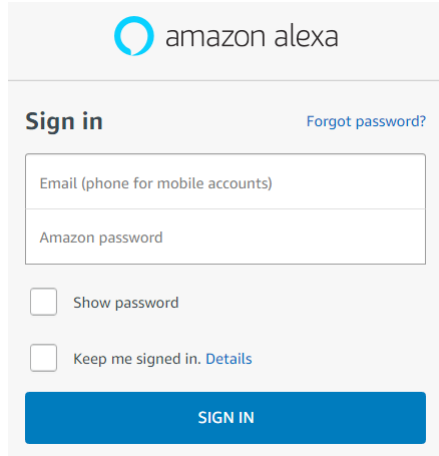
6. After adding the device, the device name will show on the upper right corner. You can click the button to switch to device control.



Method E: Amazon Echo (Alexa) control

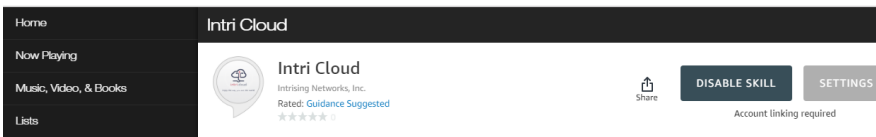
Connecting your IntriCloud to Alexa. Make sure your Echo device is linked to your Amazon account before continuing.

1. Go to alexa.amazon.com. Create an account or login using an existing Amazon account.

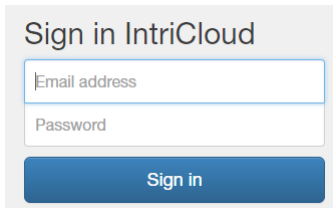
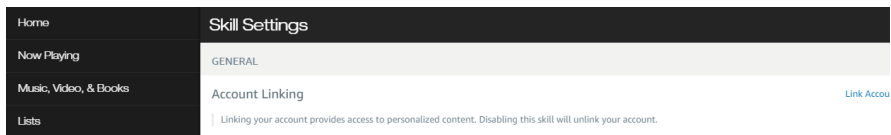


The screenshot shows the Amazon Alexa sign-in interface. At the top, the Amazon Alexa logo is displayed. Below it, the text "Sign in" is followed by a link for "Forgot password?". There are two input fields: "Email (phone for mobile accounts)" and "Amazon password". Below the password field, there are two checkboxes: "Show password" and "Keep me signed in. Details". At the bottom, there is a prominent blue "SIGN IN" button.

2. Install IntriCloud for Echo. Search using keyword "Intri Cloud" in Skills page and click "Enable". Then go to Settings to link it.



3. Click “Link Account” and the “IntriCloud” sign in box will pop up. Type in your Intri Cloud account and password, to successfully link Intri Cloud and Amazon Alexa.



Sign in IntriCloud

Email address

Password

Sign in

amazon alexa



Intri Cloud has been **successfully** linked.

What to do next:

- Try saying: *“Alexa, open la la land”*
- Close this window to return to the skill page.

Voice Control

Step 1. *""Alexa, open la la land""* (into IntriCloud)

Step 2. *""list device""* (What device connected to your IntriCloud)

Step 3. *""select device""* (Select the device which you want to control)

Step 4. *""play (input) on (output)""* (adjust your display array)

Voice Commands

Command	description
<i>open la la land</i>	into Intri Cloud
<i>list device</i>	show out what device connected to Intri Cloud
<i>select device</i>	select the device which you want to control
<i>play "input" on "output"</i>	adjust your display array
<i>play "input" on all</i>	play a HDMI source on all displays
<i>mute "output"</i>	close a HDMI output
<i>mute all</i>	close all HDMI output

Notes: "Input" & "Output" should be the name which displays in RS232 Rename page or Intri Cloud website Mapping page.

EDID Learning

The EDID learning function is only necessary whenever you encounter any display on the HDMI output port that cannot play audio and video properly. Because the HDMI source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in audio format and video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p stereo HDMI signal output would be probably the safest choice. Nevertheless, the user can force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally.

There are TWO methods to do EDID Learning as below,

1. IR Remote Control (Page 5)
2. Software Control through RS-232 (Page 7)

There are seventeen embedded default EDID as below,

1. Full-HD(1080p@60)-24bit 2D & 2ch
2. Full-HD(1080p@60)-24bit 2D & 7.1ch
3. Full-HD(1080p@60)-24bit 3D & 2ch
4. Full-HD(1080p@60)-24bit 3D & 7.1ch
5. HD(1080i@60)(720p@60)-24bit 2D & 2ch
6. HD(1080i@60)(720p@60)-24bit 2D & 7.1ch
7. Full-HD(1080p@60)-36bit 2D & 2ch
8. Full-HD(1080p@60)-36bit 2D & 7.1ch
9. Full-HD(1080p@60)-24bit 2D & 2ch & Dolby 5.1ch
10. 4k2k@30 2ch
11. 4k2k@30 7.1ch
12. 4k2k@30-3D-PCM2CH(2ch)
13. 4k2k@30-3D-BITSTR(7.1ch)
14. 4k2k@60-420-3D-PCM2CH(2ch)
15. 4k2k@60-420-3D-BITSTR(7.1ch)
16. 4k2k@60-3D-PCM2CH(2ch)
17. 4k2k@60-3D-BITSTR(7.1ch)

FAQ

Q Can every TV work with the HDMI matrix?

A Basically, the answer is YES. But if your TV can not support 1080p, please refer the EDID LEARNING section to learn EDID from your TV.

Q What is EDID? Why do I need to learn EDID?

A EDID contains the whole information of the display such as the resolution and audio setting which this display can support. Therefore, based on the EDID information, media player will pick up the most suitable resolution and audio setting to the display. In order to faithfully transmit the EDID information from display to the media player, learning EDID from display to this device is necessary.

Q What should I do to learn EDID for the matrix?

A Due to the limitation of HDMI, the source device can only output one format of video and audio. In other words, the source device cannot output 720p and 1080p video at the same time, or output stereo and surround sound at the same time. Therefore, you may need to manually setup each HDMI input for desirable audio/video output format. The mechanism of EDID Learning is to pick up the HDMI display with the lowest capability among the ones you would use for this input source. For example, if user would like to play the Input-2 upon output-2, output-3 and output-4, and only output-3 cannot support 1080p [support up to 720p only], please learn the EDID from the display connected to the output-3 at the Input-2 port. Of course, if output-3 would get the HDMI signals from every HDMI input, please learn EDID information from output3 to all four HDMI inputs. For more information about EDID Learning, please refer to EDID LEARNING section.

Q My TV can support 1080p, but why there is no audio?

A The factory default EDID of this device is 1080p & 2ch audio. However, there would be a problem after you change to use 1080p & 7.1ch if the TV cannot support 7.1ch audio. Please use the default EDID, 1080p & 2ch audio.

Q When I set an audio amplifier (AV receiver) between TV and the matrix to extract 7.1ch audio, but why there is still no audio?

A Basically, the default EDID of the chosen input can support 7.1ch audio, but the problem is that the EDID of the amplifier still cannot match the default setting. Therefore, the best method is to learn EDID from the amplifier directly. Please refer to EDID LEARNING section and follow the steps to learn the EDID. When learning EDID from the amplifier, user just needs to connect the matrix and amplifier. *Please don't connect HDMI cable between amplifier and TV when the EDID learning is proceeding.*

Q When I play the same content upon multi-displays, why only the TV equipped with amplifier can have 7.1ch audio, and the others don't have 7.1ch audio even no stereo?

A Due to the limitation of HDMI, the source only can choose one video and one audio format to play, which can be either 1080p and 7.1ch or 1080p and stereo audio. It means when the user sets the matrix at 1080p and 7.1ch, the source will only play the content under this format. Therefore if the TV cannot decode 7.1ch audio, there is definitely no audio.

Support

For more info or tech support
<http://www.siig.com/support>

Nov, 2018 Copyright © 2018 by SIIG, Inc. All rights reserved.