SIIG®

HDMI 2.0 4x4 Matrix
with
Amazon Echo Control Enabled

User Manual

THREE YEAR
Manufacturer Warranty

04-1140A   P/N: CE-H23H11-S1

![SIIG logo]

![Warning triangle icon]

Safety and Notice

The HDMI 2.0 4x4 Matrix has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment, the HDMI 2.0 4x4 Matrix 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 warning icon]

Thank You
for your pruches!

Features
- HDMI2.0a compliant
- Supports 4K2K@60 4:4:4 8bits
- Supports HDR*, which is 4K2K@60 4:2:0 10bits
- HDCP1.4/HDCP 2.2 compliant
- Single-link 594MHz [18Gbps]
- Human body model — ±15kV [air-gap discharge] & ±8kV [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 and cloud control.
- Easy installation with rack-mounting
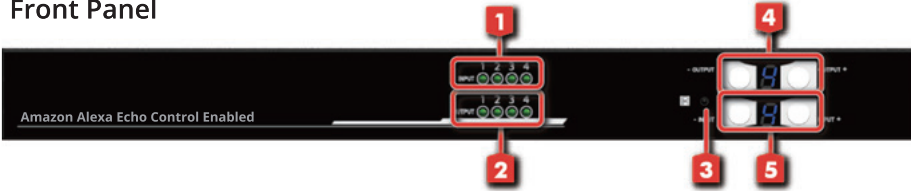- Fast response time – 2~3 seconds for channel switch

Package contents
- HDMI 2.0 4x4 Matrix
- Power adapter DC 12V / 2A
- IR Receiver
- IR Remote control
- Rack-mounting ear set
- Installation software CD
- User Manual

Layout
Front Panel

1. **Source Status:** Input source detection LED

2. **Display Status:** Output display detection LED

3. **IR SENSOR:** IR sensor for receiving the IR commands from IR remote

4. **Output Push Button & 7-segment LED:** Front panel push buttons used to select the number of display channel &LED display for output ports

5. **Input Push Button & 7-segment LED:** Front panel push buttons used to select the number of input source & LED display for input channels

Rear Panel
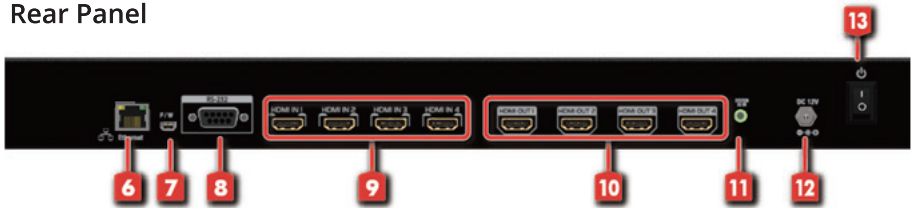
6. **Ethernet:** Ethernet control port

7. **USB:** USB control port (for software control and firmware update)

8. **RS-232:** RS-232 control port (for software control and firmware update)

9. **INPUT 1-4:** HDMI inputs

10. **OUTPUT 1-4:** HDMI outputs

11. **System IR Receiver:** Ext. IR receiver

12. **+12V DC:** 12V DC power jack

13. **Power Switch**

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

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Application
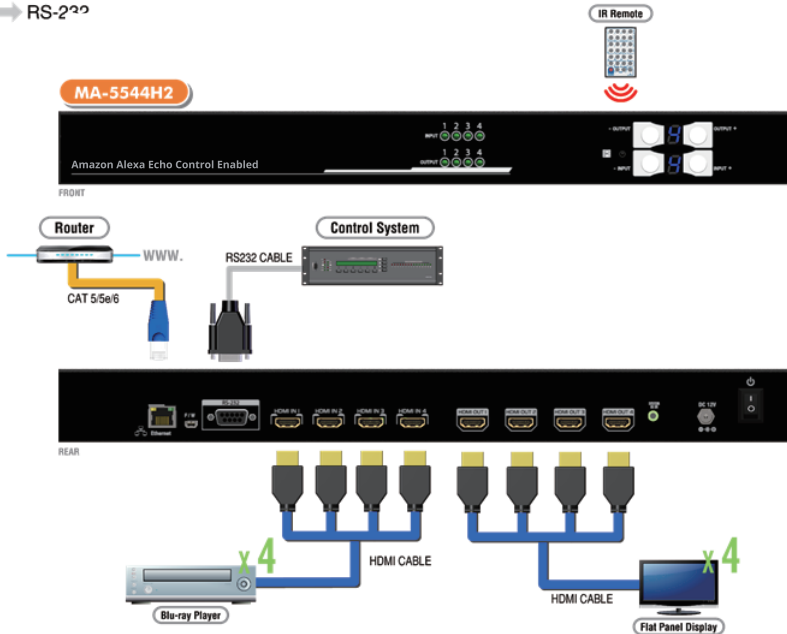
Operation Approach

Method A: Push-in Button

- Use the "+"or "-" output push button to select the number of display
- Use the "+"or "-" input push button to select the number of input source
- After you select the desired input/output port, the LED will blink twice and the setting will be effective

Method B: IR Remote Control

Button	Function
OFF	Standby mode
ON	Power on the matrix switcher
MUTE	Turn off output's video and 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 F2	Reserved
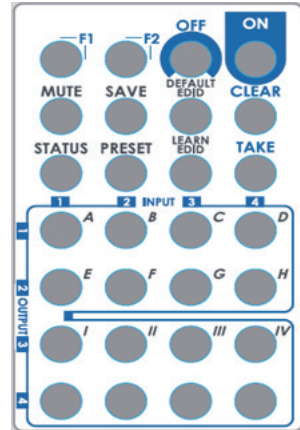
• IN/OUT Switch

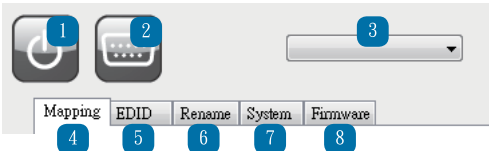| Operation	Procedure	7-Segment LED
IN/OUT Switch	**Push the button on the checkerboard to select input & output port**	
Ex: Input 2 To Output 3	Push the red circle button as right pic to select input 2 to output 3	3 2
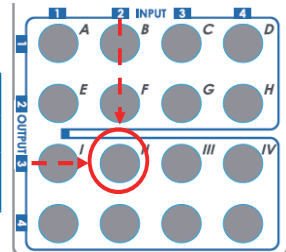
• Example of function key

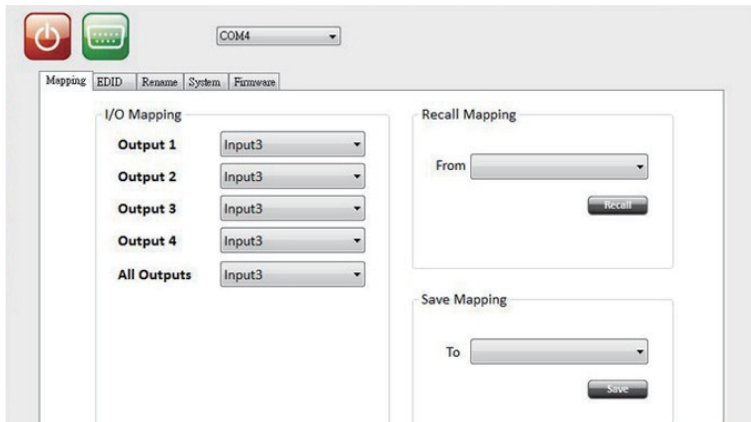| Operation	Procedure	7-Segment LED
Mute Output	**Mute + A~D(Output 1~4) + Take**	
Ex: Mute Output 3	1. Press "MUTE" button	- 0
	2. Press number key "C" to select Output 3	3 0
	3.Press "TAKE" button	3 0
Output Status	**Status + A~D(Output 1~4) + Take**	
Ex: Output 4 (Input 2)	1.Press "STATUS" button	- -
	2.Press number key "D" to select Output 4	4
	3.Press "TAKE" button	- 4 2
Save Current Mapping	**Save + A~H(1-8 storage site) + Take**	
Ex: Save current mapping to 5	1.Press "SAVE" button	d -
	2.Press number key "E" to select the storage site 5	d 5
	3.Press "TAKE" button	
Preset Mapping	**Preset + A~H(1-8 storage site) + Take**	
Ex: Preset saved mapping from 5	1.Press "PRESET" button	P -
	2.Press number key "E" to select the storage site 5	P 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	1.Press "DEFAULT EDID" button	E d
	2.Press number key "B" to select default EDID 2	2 d
	3.Press number key "III" to select Input 3	2 3
	4.Press "TAKE" button	0 (success) F (fail)
Learn Output EDID	**Learn + A~B(Output 1~2) + I~IV(input 1~4) + Take**	
Ex: Learn Output 4 Input 3	1.Press "LEARN" button	E L
	2.Press number key "D" to select Output 4	4 L
	3. Press number key "III" to select Input 3	4 3
	4.Press "TAKE" button	0 (success) F (fail)
Mute Output	**Mute + A~B(Output 1~2) + Take**	
Ex: Mute Output 3	1. Press "MUTE" button	- 0
	2. Press number key "C" to select Output 3	3 0
	3.Press "TAKE" button	3 0

Method C: Software control through RS-232 port

(1) OS Information: MS WinXP/7/8.1/10

(2) Baud rates: 9600

(3) Software size: 1 MB

(4) Minimum RAM requirement: 256 MB

1	Power ON/ Standby mode
2	Control SW via RS-232
3	COM Port Selection
4	I/O Routing Button
5	EDID Button
6	Rename I/O Button
7	Network Setting & Default Reset Button
8	Firmware Update Button

1. Mapping page
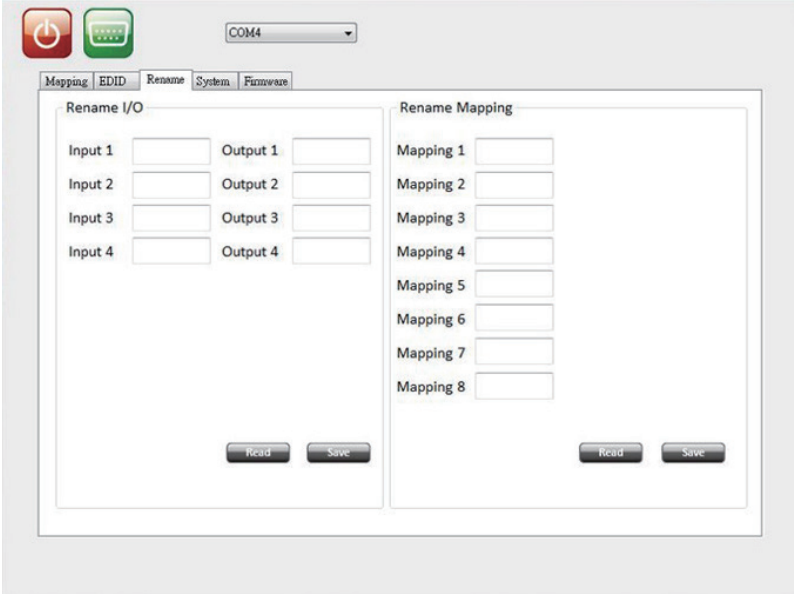
- **I/O Mapping:** Switch the input for each output

- **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
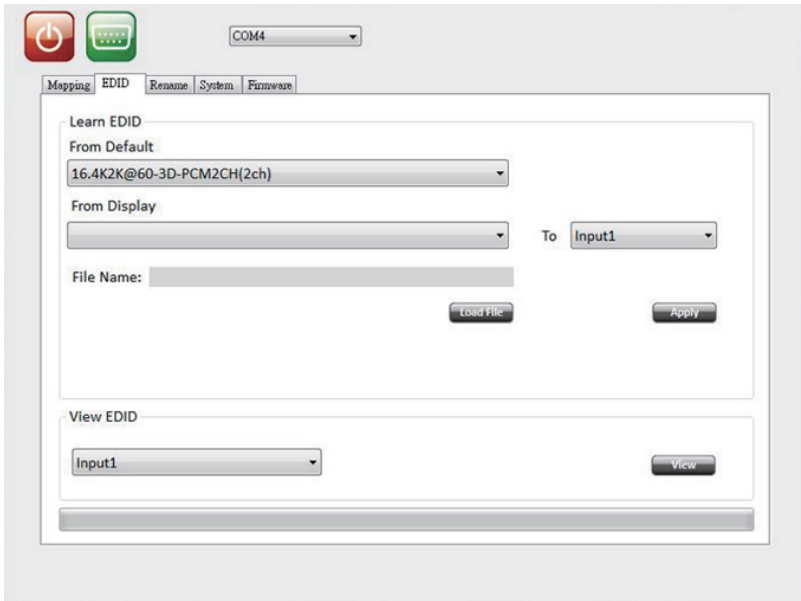
- **Learn EDID from Default to Input**

    (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 or HDMI output

    (2) Click "View" button to read and analyze the EDID

3. Rename page

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

- **Rename Mapping:**
  (1) Rename the Mappings

4. System page
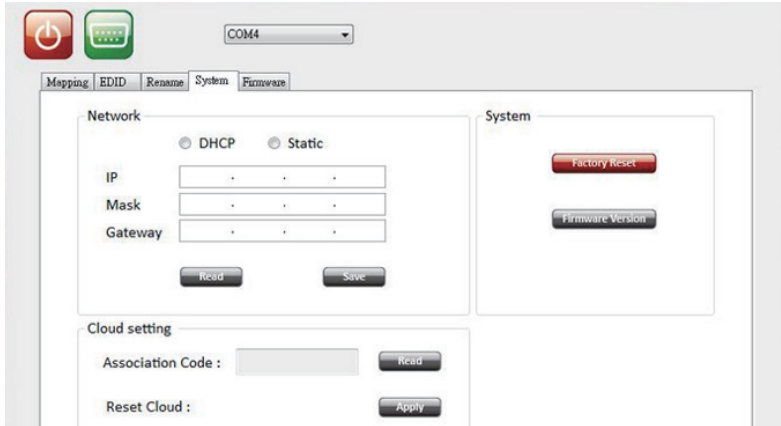
Network-DHCP mode
- Select DHCP and click "Read" button to get the IP address Information

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 192.168.1.111
- Read the IP address from the device

System-Factory Reset
- To do factory default reset

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

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5. Firmware page
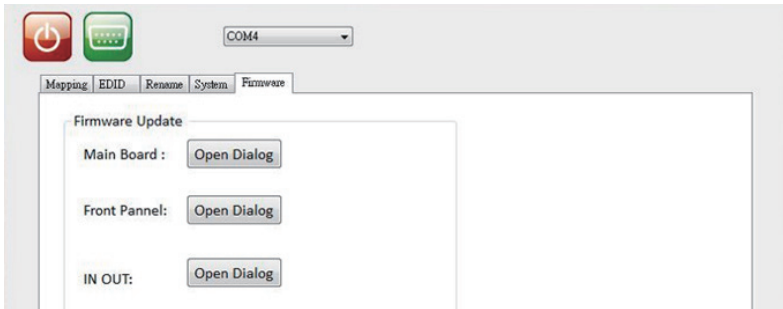
Main Board
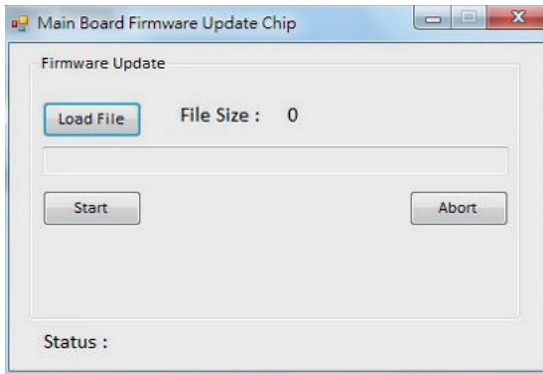
1. Before you start to update, please make sure you have secured the connection between your computer COM port and the device.

2. Click the "Open Dialog" button to do firmware update, the firmware update window of main board shows up as below

3. Click the "Load File" button to select the file which you want to write into device

4. Click the "Start" button and the main board firmware will start to update

5. Power Cycle device to into the bootloader entry

6. After updating, please power cycle the device

Front Panel
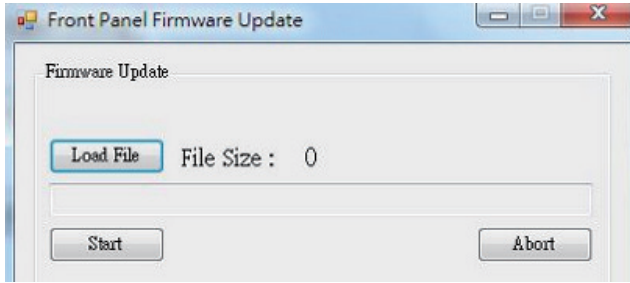
1.   Click the "Open Dialog" button and the firmware update window of front panel shows up as below

2.   Click the "Load File" button to select the front panel firmware file

3.   Click the "Start" button to do front panel firmware update
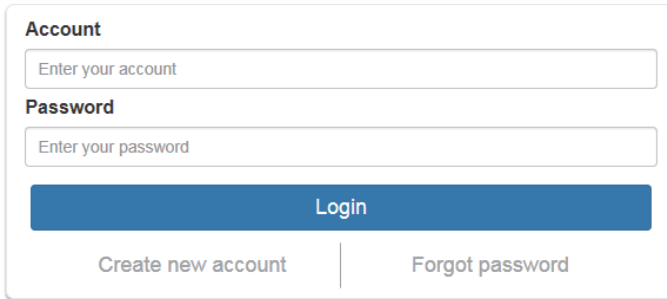
IN OUT
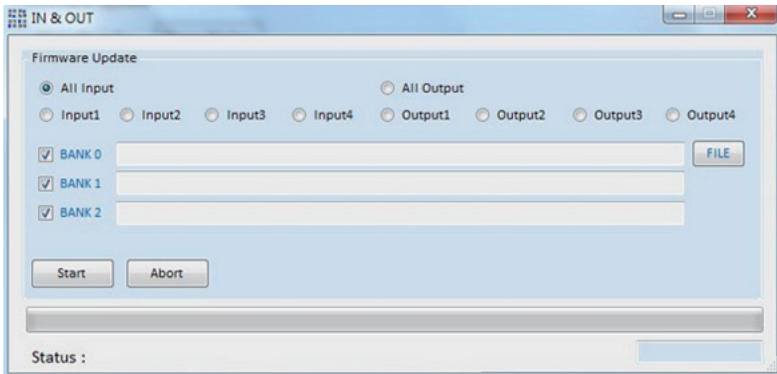
1.   Click the "Open Dialog" button to open the firmware update window and the window of IN OUT shows up as above

2.   Select the input or output port which you want to do firmware update

3.   Click the "FILE" button to load the input/output firmware file

4.   Click the "Start" button to do firmware update

Method D: Control through "intriCloud" on internet

Create Account

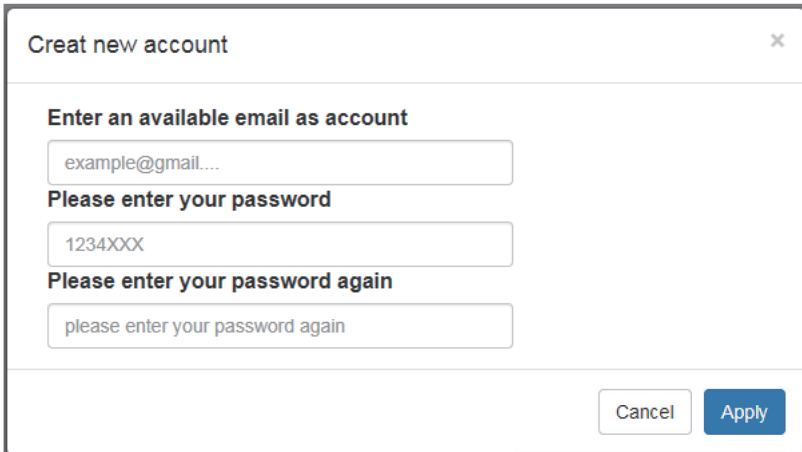The first time to use the intriCloud service, please create a new account.

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

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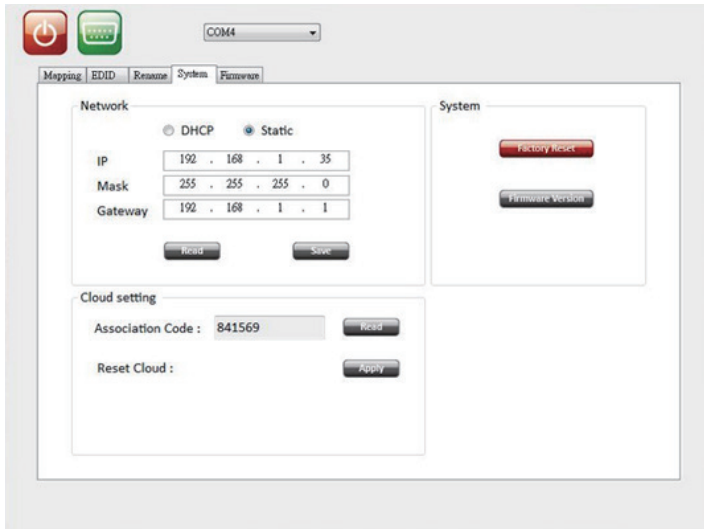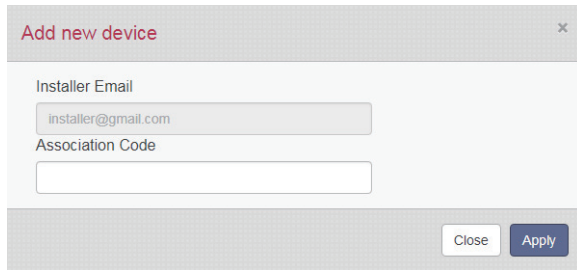
Add Device to intriCloud

1. Firstly, please make sure the device is connected to the Ethernet. Then please executing the software with device to get the association code (Note: the status of software is connected).

2. Access intriCloud (www.intri.cloud)or download IntriCloud APP,and then log in your account on the right top corner. Click **Add device** to add the device which you just got its association code.
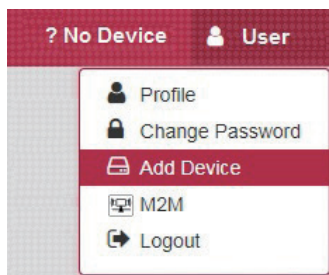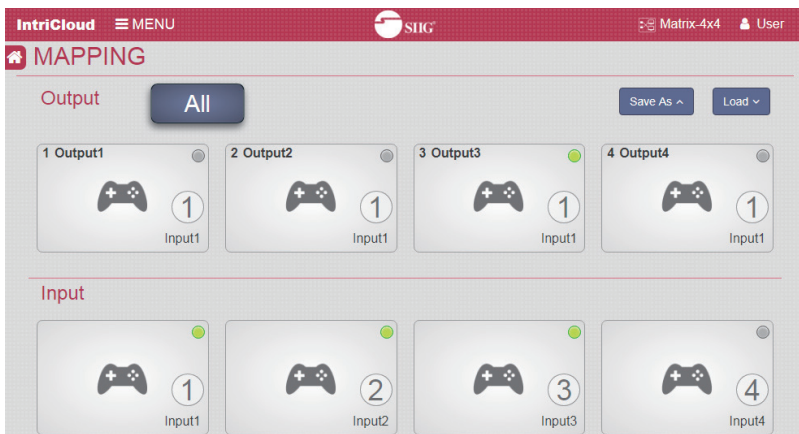
3. Enter the Installer Email for online support in the future, and the Association Code for pairing with your device.

4. After adding the device, the list of device related to your account will show on the right top corner. You can click the button to switch device for control.
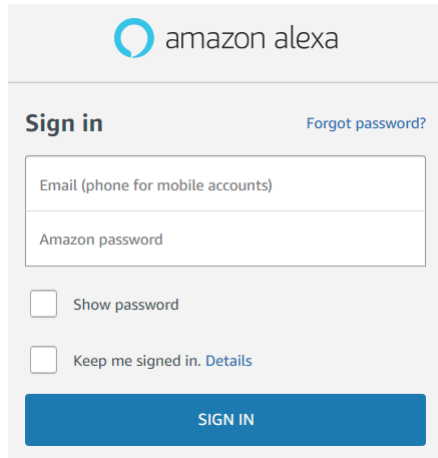

5. Start to use

Method E: Amazon Echo (alexa) control
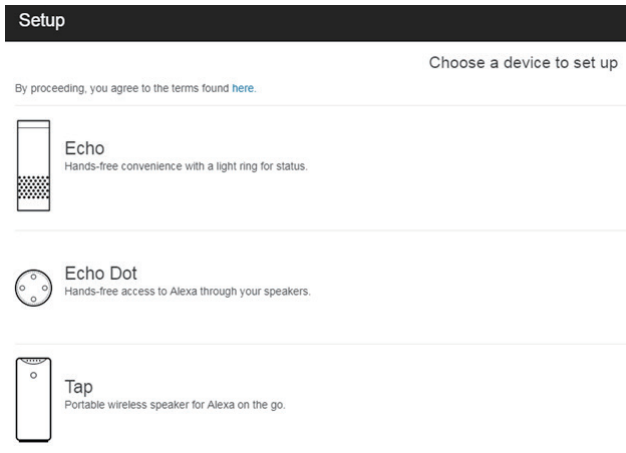
Connecting your Intri-Cloud to Alexa

1. Create & login amazaon alexa account

2. Setting your Echo devices

3. Install Intri Cloud skill for Echo. Search "Intri Cloud" in Skills page then select it into SETTINGS page.
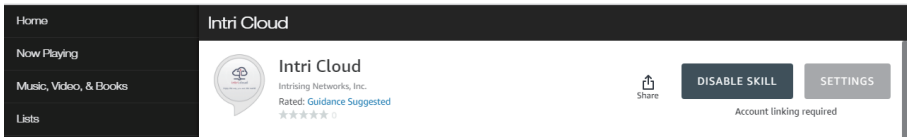
4. Click "Link Account" and it will pop out a window of "IntriCloud"to sign in.Type in your IntriCloud account and password, successfully linked Intri Cloud and amazon alexa
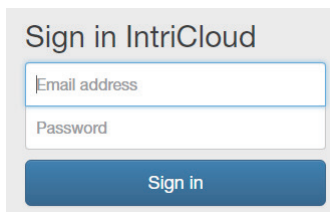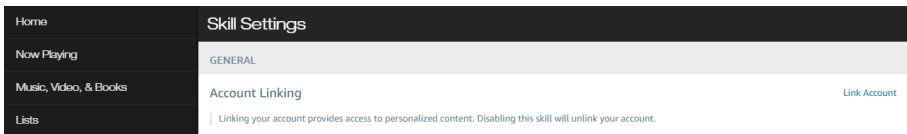
Voice Control

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

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

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

Notes: "Input" & "Output" should be the name which display in RS-232 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 7)
2. Software Control through RS-232 (Page 9)

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 outpt-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.

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Support

For more info or tech support

http://www.siig.com/support