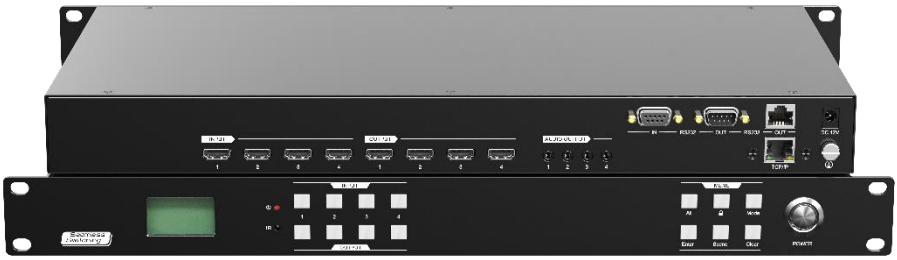
User Manual

MAMI-44-2SA

4x4 HDMI2.0 Seamless Matrix Switcher



Version: MAMI-44-2SA _2025V1.0

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till April, 2025. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user’s authority to operate the equipment.

Safety Precautions

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Table of Contents

1. Product Introduction

The MAMI-44-2SA is a professional 4x4 HDMI 2.0 Seamless Matrix Switcher with EDID management. It includes 4 HDMI inputs, 4 HDMI outputs, which is designed for switching two HDMI2.0. It also features 4 analog audio outputs for audio matrix.

The matrix switcher features comprehensive EDID management to ensure maximum functionality with a wide range of video sources.

The matrix switcher supports front panel, IR, RS-232, and TCP/IP control options.

1.1 Features

- Supports seamless switching.
- Supports power-off memory function.
- Support 8 built-in EDID and customed EDID.
- 15 output resolutions are available by default.
- Support 4 output channels audio and video separation.
- Supports HDMI2.0, and resolution up to 4096x2160@60Hz.
- Supports color space RGB 4:4:4, YCbCr4:4:4 and YCbCr4:2:2.
- Support bi-directional RS-232, IR, TCP/IP and front panel to control.

1.2 Package List

- 1 x MAMI-44-2SA
- 1 x Power Adapter
- 1 x DB9 to DB9 Cable
- 1 x Remote Controller
- 4 x Foot Pad
- 1 x User Manual

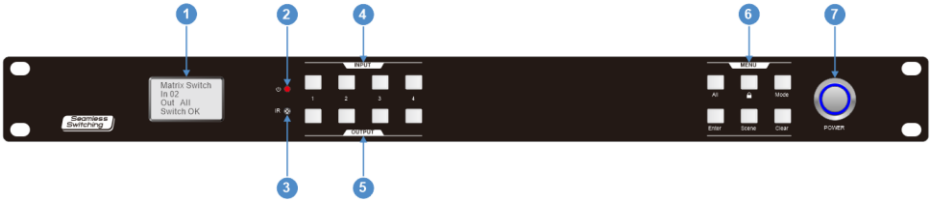
Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

2. Specification

Video	
Video Input	4 x HDMI
Video Input Port	4 x HDMI Type-A female
Video Input Resolution	Up to 4K@60Hz 4:4:4
Video Output	4 x HDMI
Video Output Port	4 x HDMI Type-A female
Video Output Resolution	Up to 4K@60Hz 4:4:4
HDMI Version	HDMI 2.0
HDCP Version	HDCP 2.0
Analog Audio Output	
Output	4 x analog L/R audio
Output Port	4 x 3.5mm audio jack
Audio Format	PCM 2.0
Control	
Control	1 x Built-in IR 1 x RS232-IN, 2 x RS232-OUT, 1 x TCP/IP
Control Port	1 x DB9 female port 1 x DB9 male port 2 x RJ45
General	
Transmission Distance	4K 60Hz ≤ 5m 1080p < 15m
Operation Temperature	0 ~ +40°C
Storage Temperature	-10 ~ +50°C
Relative Humidity	10% ~ 90%
External Power Supply	DC 12V 2A
Dimension (W*H*D)	483 x 44 x 236mm
Net Weight	2.55KG

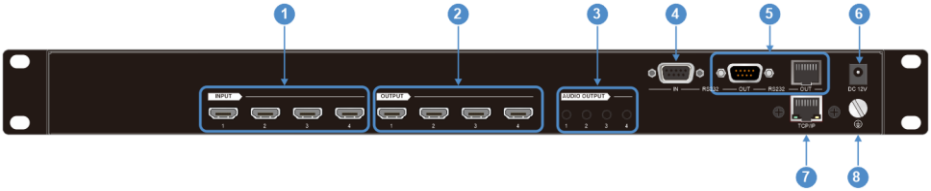
3. Panel Description

3.1 Front Panel



No.	Name	Description
①	**LCD**	Display information and status.
②	**POWER INDICATOR**	1) Red LED on when working. 2) Red LED off when power off.
③	**IR**	Built-in IR receiver, receive IR control signal.
④	**INPUT**	4 x white buttons, choose input channels.
⑤	**OUTPUT**	4 x white buttons, choose output channels.
⑥	**MENU**	● **All:** 1 x white button Press it with other buttons will send one input source to all output channels. ● **:** 1 x white button Lock or unlock the front panel. ● **Mode:** 1 x white button Press it with other buttons to store the preset scene. ● **Enter:** 1 x white button Confirm the commands. ● **Scene:** 1 x white button Press it with other buttons to recall the scene. ● **Clear:** 1 x white button Eliminate commands. ***Note:** For more details about the MENU, please check **5. Panel Control***
⑦	**POWER**	Power button with circle light.

3.2 Rear Panel



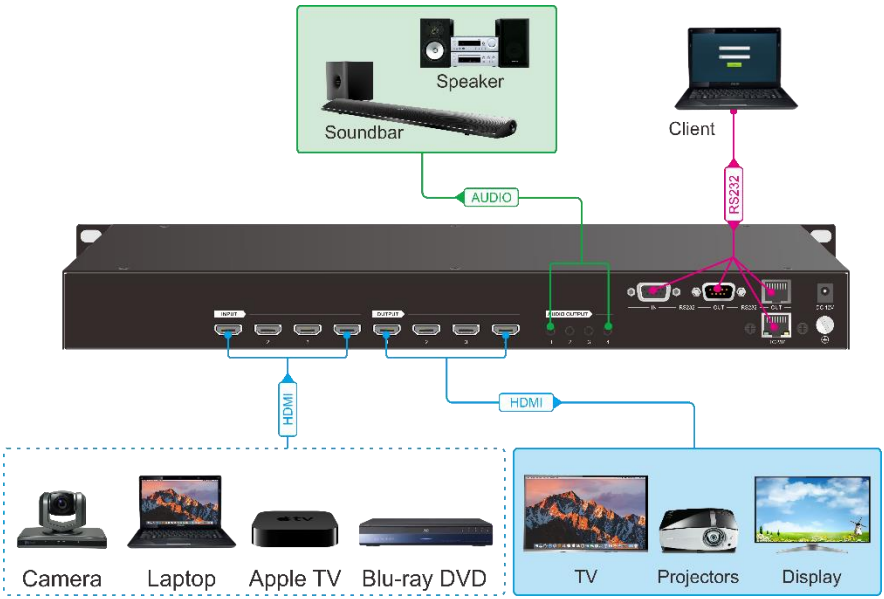
No.	Name	Description
①	**INPUT**	4 x HDMI IN, connect to HDMI source device.
②	**OUTPUT**	4 x HDMI OUT, connect to HDMI display.
③	**AUDIO OUTPUT**	4 x 3.5mm audio jack, supports HDMI audio de-embedding analog output.
④	**RS232-IN**	1 x DB9 female port, connect to the host device.
⑤	**RS232-OUT**	1 x DB9 male port and 1 x RJ45 port, connect to the peripherals.
⑥	**DC 12V**	Power supply, DC12V 2A
⑦	**TCP/IP**	1 x RJ45 port, for client control.
⑧	**GND**	Ground terminal.

4. System Connection

4.1 Usage Precaution

- Make sure all components and accessories are included before installation.
- System should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before power on.

4.2 System Diagram



4.3 Connection Steps

Step 1: Use the HDMI cable connects the HDMI source device to the **INPUT port**.

Step 2: Use the HDMI cable connects the display to the **OUTPUT port**.

Step 3: Use the audio cable connects the speaker to the **AUDIO OUTPUT port.**

Step 4: Use RS-232 cable connects the host device to the **RS232 IN port**.

Step 5: Use RS-232 cable connects the peripherals to the **RS232 OUT port**.

Step 6: Connect the power adapter to the **POWER port**.

5. Panel Control

- **I/O**

Here are four input buttons and four output buttons for switching I/O signal on device front panel.

✧ 1 input and 1 output:

Example: Input 1 to Output 3
Press **INPUT 1 + OUTPUT 3 + Enter** buttons.

✧ 1 input and 3 outputs:

Example: Input 1 to Output 2, Output 3, Output 4.
Press **INPUT 1 + OUTPUT 2, OUTPUT 3, OUTPUT 4 + Enter** buttons.

✧ 1 input and all outputs:

Example: Input 2 to all Outputs
Press **INPUT 2 + All + Enter** buttons.

- **Lock**
  - ✧ Press **Lock** for 3s, lock the front panel buttons.
  - ✧ Press **Lock** for 3s again, unlock the front panel buttons.

- **Mode**
  Set up input and output via the front panel buttons. Press **Mode** + **INPUT X** + **Enter** to save preset scene.

Note: *X represents the channel number.*

- **Enter**
  Press **Enter** to perform the operation.

- **Scene**
  Press **Scene** + **INPUT X** + **Enter** to recall preset scene.

Note: *X represents the channel number.*

- **Clear**
  Press **Clear** to withdraw the operation before the **Enter** button comes into effect. Device will return to the previous status.

6. IR Remote Control

The device has built-in IR receiver to receive IR signal from IR remote control.

Note: *Model/ W/ M/ X/ Y/ Z buttons without available functions.*

- **AV**
  Convert 1 input to 1 output:
  Example: switch INPUT 1 to OUTPUT 3.
  → Press **1 + AV + 3 + OK**

- **All**
  Convert 1 input to 4 outputs:
  Example: switch INPUT 1 to all OUTPUT.
  → Press **1 + All + OK**

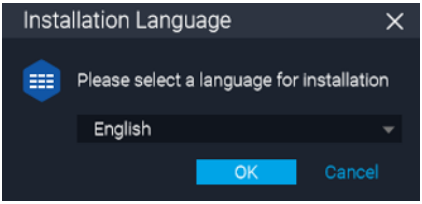
- **Scene**
  Recall the preset scene: **Scene + X + OK**
  Note: *X represents the number*

- **OK**
  Confirm the operation.

7. Client Control

7.1 Installation

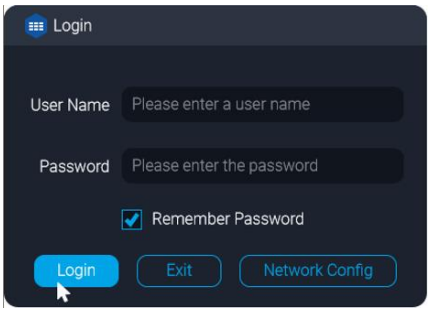
- **Installation:** Copy and paste the software package to PC. Extract and double click the .exe setup file and follow the instructions to install the software. Supports two installation languages: Simplified Chinese and English.



- **Uninstallation:** Search 'Control Panel' in the search filed beside the Windows icon on Windows OS, and click it from the result. Go to 'Programs' > 'Programs and Features'. Right click the **Matrix controller** and choose 'Uninstall' or 'Uninstall/Change'.

7.2 Login

1) Run the software and enter the login interface.

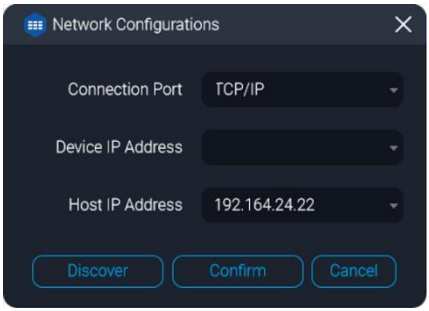


Default User Name：admin

Default Password：123456

Check **Remember Password** option to make this account be the default login account.

2) Click **Network Config.**



Select the Connection Port: **TCP/IP** or **COM Port**. The default connection is **COM Port**.

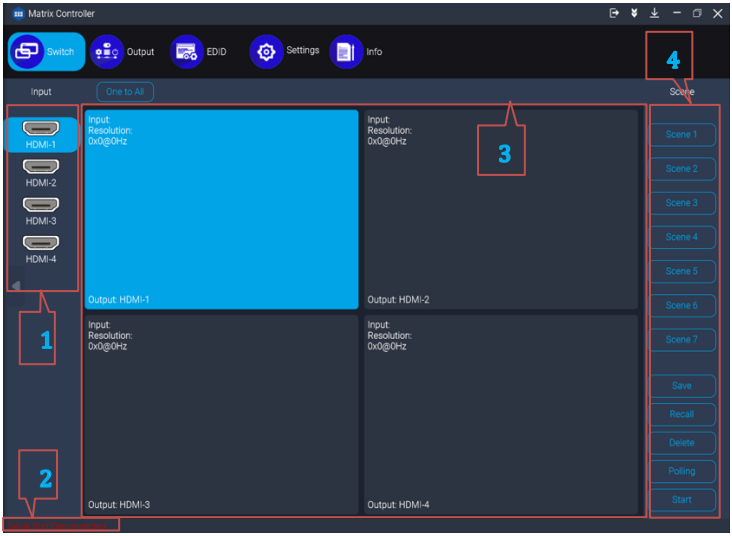
3) Click **Confirm** enter the controller interface.

Note: *The device supports baud rates: 9600, 19200, 38400, 57600 and 115200. The baud rate can be switched by command. Default device IP is 192.168.0.178 and port is 4001.*

7.3 Operations

7.3.1 Switch

When successfully logged in, it shows the screen as below:



1. Input: Choose the input signal.

2. Status: Shows current connection and control status.

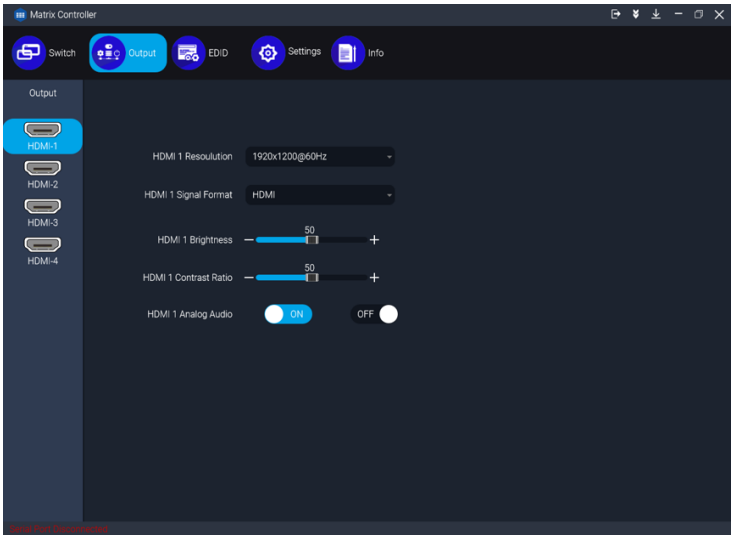
3. Output: Choose the output interface and output the chosen input signal to display device. Click **One to All** that 4 output devices will display one input signal.

4. Scene:

- Save: Save signal routing configuration and signal parameter settings.
  Example: Click **HDMI1** -> **Output: HDMI-1** and **Output: HDMI-3** -> **Scene1**-> **Save**
- Recall: Use a saved scene.
  Example: Click **Scene 1**-> **Recall**
- Delete: Delete the scene.
  Example: Click **Scene 1**-> **Delete**
- Polling: Click it will display a **new setting interface**. Add the scenes to the polling list and set the time interval. Click **Save**.
- Start: Start polling the scene.

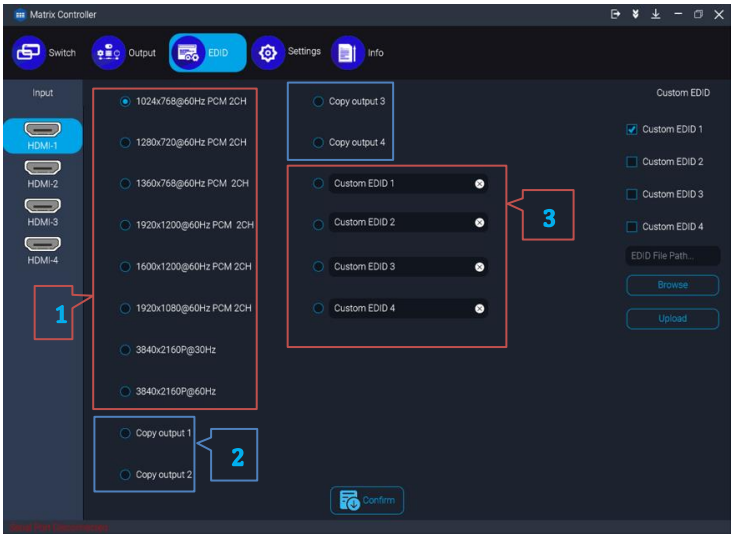
7.3.2 Output

Here can set the output resolution, output signal format, brightness, contrast ratio and turn on/off analog audio.



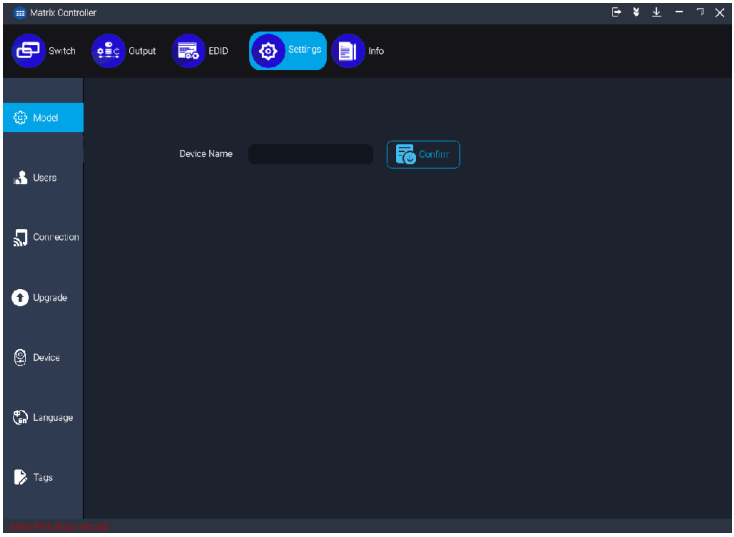
7.3.3 EDID

The EDID setting interface can call or learn the built-in EDID data, custom EDID data and output EDID data to the input.



1. 8 built-in EDIDs
2. **Copy output 1 ~ Copy output 4** are the EDID data of the output.
3. **Custom EDID1 ~ Custom EDID4** are customized and can be called after uploading EDID file data.

7.3.4 Settings



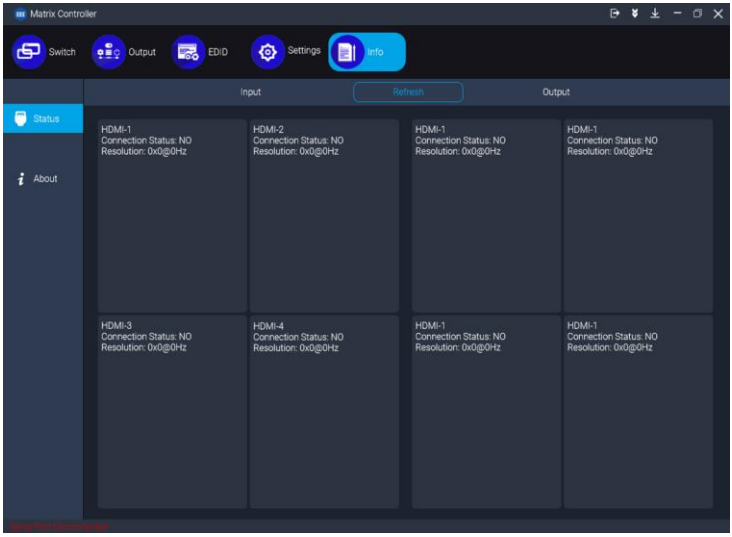
- **Model**: Change the name of device.
- **Users**: Modify the Administrator account and ordinary user account.
- **Connection**:
  - ✧ Network Settings: Set the IP relative parameters.
  - ✧ Serial Port Settings: Set the RS-232 baud rate.
- **Upgrade**: Upgrade the MCU program of device online.
- **Device**:
  - ✧ Factory Reset: Reset the device to initial state.
  - ✧ Standby: Device enter standby mode.
  - ✧ Wakeup: Wakeup the device and use it.
  - ✧ Lock: Lock the buttons on the front panel of the device.
  - ✧ Unlock: Unlock the buttons on the front panel of the device.
- **Language**: Modify the language version of the software. Support Chinese and English.
- **Tags**: Name the input, output and scene.

Note: *1) Devices without network port do not support IP-related settings, please do not operate.*

2)RS-232 input and output baud rate cannot be modified at the same time.

3) Administrator and ordinary user names cannot be modified.

7.3.5 Info



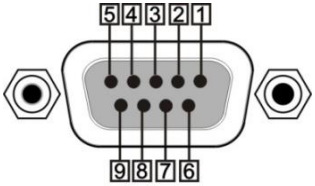
- **Status**: Show the connection status and current resolution of the input port (HDMI1~HDMI4) and output port (HDMI1~HDMI4).

Note: *If the connection status and resolution have changed, click 'Refresh' to update*.

- **About**: Display the software and hardware version of the device.
  1) Enter the commands in the input field and click **Send**.
  2) Feedback will display in the output field. The feedback log can be cleared, exported and browsed.

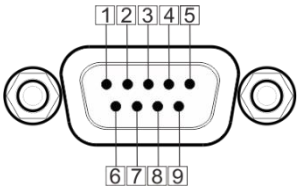
8. RS-232 Control

Through Device connects to PC/ laptop/ Controller via RS-232 port to control local device or 3rd party device. RS-232 IN port uses DB9 9-pin female port, RS-232 OUT ports use DB9 9-pin male port and RJ45 port as below:



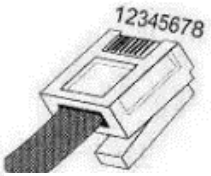
DB9 Female Port

Pin	Name	Function
1	N/u	Blank
2	Tx	Transmit
3	Rx	Receive
4	N/u	Blank
5	GND	GND
6	N/u	Blank
7	N/u	Blank
8	N/u	Blank
9	N/u	Blank



DB9 Male Port

Pin	Name	Function
1	N/u	Blank
2	Rx	Receive
3	Tx	Transmit
4	N/u	Blank
5	GND	GND
6	N/u	Blank
7	N/u	Blank
8	N/u	Blank
9	N/u	Blank



RJ45-OUT Port

Pin	Color	Function
1	Orange/White	Blank
2	Orange	Blank
3	Green/White	Transmit
4	Blue	GND
5	Blue/White	GND
6	Green	Receive
7	Brown/White	Blank
8	Brown	Blank

8.1 Installation/uninstallation of RS-232 Control Software

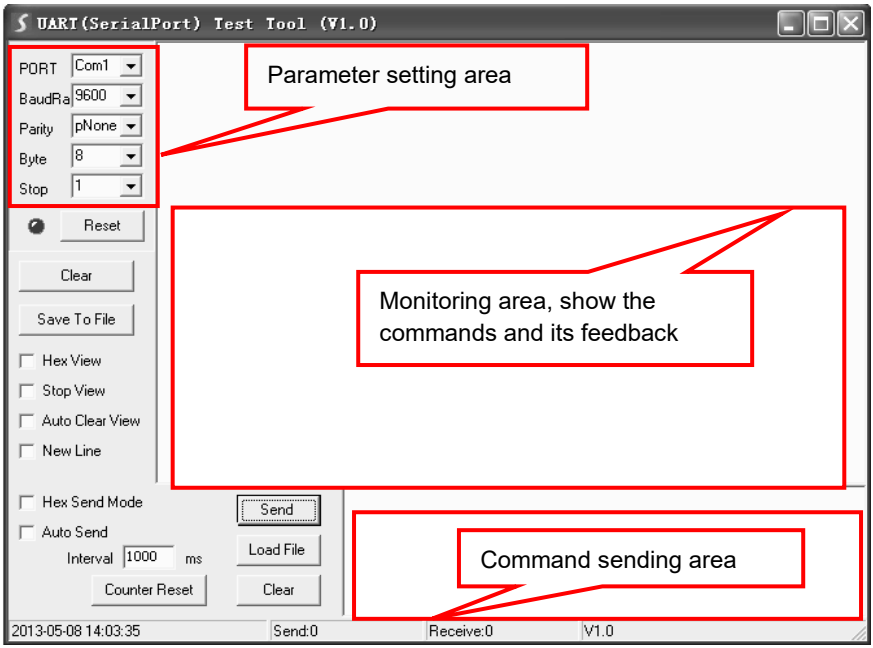
- **Installation:** Copy the control software file to the control PC.
- **Uninstallation:** Delete all the control software files in corresponding file path.

8.2 Basic Settings

Firstly, connect MAMI-44-2SA with necessary input devices and output devices. Then, connect it with a PC installed RS-232 control software. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as example. The icon is showed as below:

The interface of the control software is showed as below:



Set the parameters (PORT, Baud Rate, Parity, Byte and Stop) correctly to ensure reliable RS-232 control.

8.3 RS-232 Commands

8.3.1 Before use

1) Case-sensitive.
2) "[", "]" in the commands are for easy recognition only and not necessary in real operations. Other symbols including ".", ",", "/", "%", ";", "^". are parts of the commands.
3) Feedback listed in the column "Common Feedback" are only for reference, feedback may vary according to different operations.
4) Recommend settings:
   - Baud rate: 115200
   - Data bit: 8
   - Stop bit: 1
   - Parity bit: none

8.3.2 System Commands

Command	Function & examples	Command Feedback
(standby)	System standby	system off ok
(wakeup)	System wake up	system on ok
(reset)	Factory reset	factory reset ok
(rename,product, [param])	Set device name. Param=MAMI-44-2SA Example: (rename,product, MAMI-44-2SA)	product name: MAMI-44-2SA ok

8.3.3 Control Management

Command	Function & examples	Command Feedback
(sw, [inch], [outch])	Switch input [inch] to output [outch]. Inch=Input Channel Outch=Output Channel Example: (sw,1,2)	out 2 in 1 ok
(sw, [inch],a)	Switch input [inch] to all output. Inch=Input Channel Example: (sw,1,a)	out 1 in 1 out 2 in 1 out 3 in 1 out 4 in 1 ok
(scene,save,[Param])	Save preset scene. Param=Scene number(1-32) Example: (scene,save,1)	scene 1 saved ok
(scene,call,[Param])	Recall preset scene Param=Scene number(1-32) Example:	scene 1 called ok

Command	Function & examples	Command Feedback
	(scene,call,1)	
(scene,del,[Param])	Preset scene delete. Param=Scene number(1-32) Example: (scene,del,1)	scene 1 deleted ok
(set,o.format,[outch], [mode])	Set output [outch] signal format. Outch=1-4 Mode= 0-HDMI Mode= 1-DVI Example: (set,o.format,1,0)	output hdmi 1 format is hdmi ok
(set,o.res,[ch],[param])	Set output [ch] resolution. Ch=Output 1-4 Param=1~15 1 - 1920x1200@60Hz 2 - 1920x1080@60Hz 3 - 1280x720@60Hz 4 - 1360x768@60Hz 5 - 1280x1024@60Hz 6 - 1024x768@60Hz 7 - 1600x1200@60Hz 8 - 1440x900@60Hz 9 - 1600x900@60Hz 10 - 1280x720@50Hz 11 - 1920x1080@50Hz 12 - 3840x2160@30Hz 13 - 4096x2160@30Hz 14 - 3840x2160@60Hz 15 - 4096x2160@60Hz Example: (set,o.res,1,1)	out 1 res 1920x1200@60Hz ok
(set,i.baud,[param])	Set input RS-232 baud rate. Param =1 ~ 5 1 – 9600 2 - 19200 3 - 38400 4 - 57600	in baudrate 9600 ok

Command	Function & examples	Command Feedback
	5 - 115200(default) Example: (set,i.baud,1)	
(set,o.baud,[param])	Set output RS-232 baud rate. Param =1-5 1 – 9600 2 - 19200 3 - 38400 4 - 57600 5 - 115200(default) Example: (set,o.baud,5)	out baudrate 115200 ok
(set,uart,[param])	Set RS-232 control mode. Param=1 RS232 in and out can control local device in both Example: (set,uart,1)	rs232 mode: in&out control local ok
	Set RS-232 control mode. Param=2 RS232 in can control local device or RS232 in → RS232 out to control 3rd-party. Example: (set,uart,2)	rs232 mode: in control local&out ok
(set,netcfg,IPParam1.IPParam2.IPParam3.IPParam4,MASKParam1.MASKParam2.MASKParam3.MASKParam4,GWParam1.GWParam2.GWParam3.GWParam4)	Set device IP address, subnet mask, gateway. IPParam1 - ip address 1 IPParam2 - ip address 2 IPParam3 - ip address 3 IPParam4 - ip address 4 MASKParam1 - subnet mask 1 MASKParam2 - subnet mask 2 MASKParam3 - subnet mask 3 MASKParam4 - subnet mask 4 GWParam1 - gateway 1	ip 192.168.0.178 mask 255.255.255.0 gateway 192.168.0.254 ok

Command	Function & examples	Command Feedback
	GWParam2 - gateway 2 GWParam3 - gateway 3 GWParam4 - gateway 4 Example: (set,netcfg,192.168.0.178,255.255.255.0,192.168.0.254)	

8.3.4 Query Commands

Command	Function & examples	Command Feedback
(info,dev)	Get device info	MAMI-44-2SA system on unlock ok
(info,link)	Get port connection status	ch 1 2 3 4 in N N N N out N N N N ok
(ver)	Get firmware version	mcu ctrl v1.0.0 ok
(get,i.edid,[inch])	Get EDID status Example: (get,i.edid,1)	in 1 edid 4 ok
(get,sw)	Get switching status	out 1 in 1 out 2 in 1 out 3 in 1 out 4 in 1 ok
(get,i.res,[ch])	Get current input [ch] resolution. Ch=1~4 Example: (get,i,res,1)	in 1 res 1280x720@60Hz ok

Command	Function & examples	Command Feedback
(get,o.format,[outch])	Get output [outch] signal format. Outch=1~4 Example: (get,o,format,1)	output hdmi 1 format is hdmi ok
(get,o.res,[ch])	Get output [ch] resolution Ch=1~4 Example: (get,o,res,1)	out 1 res 1920x1200@60Hz ok
(get,i.baud)	Get input RS-232 baud rate.	in baudrate 9600 ok
(get,o.baud)	Get output RS-232 baud rate	out baudrate 115200 ok
(get,netcfg)	Get device IP address, subnet mask, gateway.	ip 192.168.0.178 mask 255.255.255.0 gateway 192.168.0.254 ok

8.3.5 Lock/unlock Commands

Command	Function & examples	Command Feedback
(lock, [param])	Button Lock. Param = 0 ~ 1 1=Lock 0=Unlock Example: (Lock,1) (Lock,0)	Lock ok
		Unlock ok

8.3.6 EDID Management

Command	Function & examples	Command Feedback
(update,edid, [param])	Update custom EDID. param 1~4 1. User define 1 2. User define 2 3. User define 3 4. User define 4 Example: (update,edid,1) Timeout feedback: Edid update time out ok	please send edid file in 15s Ok edid 1 updated ok
(edid,config,[inch],[param])	Recall EDID. inch= 1~4 Param = 1 ~ 12 1. 1024x768@60Hz PCM2.0 2. 1280x720@60Hz PCM2.0 3. 1360x768@60Hz PCM2.0 4. 1920x1200@60Hz PCM2.0 5. 1600x1200@60Hz PCM2.0 6. 1920x1080@60Hz PCM2.0 7. 3840x2160@30Hz PCM2.0 8. 3840x2160@60Hz PCM2.0 (default) 9. User define 1 10. User define 2 11. User define 3 12. User define 4 Example: (edid,config,1,1)	in 1 edid 1 ok

Command	Function & examples	Command Feedback
(edid,config,[inch],[param])	EDID learning. 13. Param = 13~ 16 inch= 1~4 14. Learn output 1 EDID 15. Learn output 2 EDID 16. Learn output 3 EDID 17. Learn output 4 EDID Example: (edid,config,1,14)	in 1 edid 14 ok

9. Troubleshooting and Maintenance

Problems	Potential Causes	Solutions
Color losing or no video signal output	The connecting cables may not be connected correctly or it may be broken.	Check whether the cables are connected correctly and in working condition.
	Fail or loose connection.	Make sure the connection is good
No output image when switching	No signal at the input / output end.	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Fail or loose connection.	Make sure the connection is good.
	Input source is with HDCP while the HDCP compliance is switched off.	Send command /%[Y]/[X]:1. or change HDCP compliance status in client.
	The display doesn't support the input resolution.	Switch for another input source or enable the display to learn the EDID data of the input.
Cannot control the device via front panel buttons	Front panel buttons are locked.	Send command /%Unlock; or select unlock in client to unlock.
Cannot control the device via IR remote	The battery has run off.	Change for new battery.
	The IR remote is broken.	Send it to authorized dealer for repairing.
	Beyond the effective range of the IR signal or not pointing at the IR receiver.	Adjust the distance and angle and point right at the IR receiver.
	The IR receiver connected to IR IN port is not with carrier.	Change for an IR receiver with carrier.
Power Indicator remains off when powered on	Fail or loosed power connection.	Check whether the cables are connected correctly.

EDID management does not work normally	The HDMI cable is broken at the output end.	Change for another HDMI cable which is in good working condition.
There is a blank screen on the display when switching	The display does not support the resolution of the video source.	Switch again.
		Manage the EDID data manually to make the resolution of the video source automatically compliant with the output resolution.
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong connection.	Check to ensure the connection between the control device and the unit
	Wrong RS232 communication parameters.	Type in correct RS232 communication parameters: Baud rate:9600; Data bit: 8; Stop bit: 1; Parity bit: none
	Broken RS232 port.	Send it to authorized dealer for checking.

Note: *If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.*

10. Customer Service

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. There terms and conditions may be changed without prior notice.

1) Warranty

The limited warranty period of the product is fixed three years.

2) Scope

These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized distributor only.

3) Warranty Exclusion

- Warranty expiration.
- Factory applied serial number has been altered or removed from the product.
- Damage, deterioration or malfunction caused by:
  - ✓ Normal wear and tear.
  - ✓ Use of supplies or parts not meeting our specifications.
  - ✓ No certificate or invoice as the proof of warranty.
  - ✓ The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
  - ✓ Damage caused by force majeure.
  - ✓ Servicing not authorized by distributor.
  - ✓ Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

4) Documentation

Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defeat has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of distributor.

Remarks: Please contact your local distributor for further assistance or solutions.