

User Manual

VMX-8

Modular Matrix Switcher 8x8



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Version: VMX-8_2017V1.1

Preface

Read this user manual carefully before using the product. Pictures are shown in this manual 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 December 6, 2017. 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.

Trademarks

Product model, and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without prior written consent.

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 Suggestions

Read and Follow Instructions. Read all safety and operating instructions before operating the unit.

Retain Instructions. Keep the safety and operating instructions for future reference.

Heed Warnings. Adhere to all warnings on the unit and in the operating instructions.

Heat. Keep the unit away from heat sources such as radiators, heat registers, stoves, etc., including amplifiers that produce heat.

Power Sources. Connect the unit only to a power supply of the type described in the operating instructions, or as marked on the unit.

Power Cord Protection. Route power supply cords so that they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to the cord plugs at power receptacles and at the point at which they exit from the unit.

Water and Moisture. Do not use the unit near water—for example, near a sink, in a wet basement, near a swimming pool, near an open window, etc.

Object and Liquid Entry. Do not allow objects to fall or liquids to be spilled into the enclosure through openings.

Servicing. Do not attempt any service beyond that described in the operating instructions. Refer all other service needs to qualified service personnel.

Damage Requiring Service. The unit should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit does not appear to operate normally or exhibits a marked change in performance.
- The unit has been dropped or the enclosure has been damaged.

Limited Warranty

RTI warrants its products for a period of three (3) year (1 year only for included battery packs); or for a period of time compliant with local laws when applicable from the date of purchase from RTI or an authorized RTI distributor.

This warranty may be enforced by the original purchaser and subsequent owners during the warranty period, so long as the original dated sales receipt or other proof of warranty coverage is presented when warranty service is required.

Except as specified below, this warranty covers all defects in material and workmanship in this product. The following are not covered by the warranty:

Damage resulting from:

1. Accident, misuse, abuse, or neglect.
2. Failure to follow instructions contained in this Guide.
3. Repair or attempted repair by anyone other than Remote Technologies Incorporated.
4. Failure to perform recommended periodic maintenance.
5. Causes other than product defects, including lack of skill, competence or experience of user.
6. Shipment of this product (claims must be made to the carrier).
7. Being altered or which the serial number has been defaced, modified or removed.

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1. Introduction

1.1 About VMX-8

The VMX-8 is a high-performance 8x8 video and audio modular matrix switcher. It supports different video signals with cross switching. Every video or audio signal is transmitted and switched independently to decrease signal attenuation. VMX-8 supports various changeable cards including HDMI and HDBaseT etc. Users can choose to insert different signal card for different application.

VMX-8 boasts power off memory and audio signal can be switched separately or jointly with video signal. It has 1 RS232 port and 1 optional TCP/IP port for convenient control from third-party.

With its flexible design, VMX-8 can be used for different project and tend to be an all-in-one solution. It is the combo solution for multimedia conference rooms, control rooms, broadcasting rooms, shopping center etc. It will handle all the audiovisual management, including the switching, driving, scaling etc.

1.2 Features

- Modular chassis with configurable I/O slots, ranging from 4x4 to 8x8.
- Various I/O cards, includes HDMI and HDBaseT cards to configure any matrix.
- Truly cross-point switching, any input to any output, regardless signal format.
- Support HDMI1.4a, support 3D.
- Integrated HDBaseT technology.
- Controllable via button, RS232 & optional TCP/IP, also compatible with 3rd parties control.
- HDCP compliant.
- LCD display.

1.3 Package List

- 1 x VMX-8
- 1 x IR remote (Not include battery)
- 1 x RS232 cable
- 1 x Power cord
- 4 x Plastic cushions
- 1 x User manual

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

1.4 Signal Card (changeable cards)

VMX-8 supports multiple signal cards as listed in the following charts:

Input Cards	Spec	Inputs	Signal Format
	Models		
	VMX-IM4	4	HDMI& analog Audio
	VMX-IT4	4	HDBT, RS232, Audio

Output Cards	Spec	Outputs	Signal Format
	Models		
	VMX-OM4	4	HDMI& analog Audio
	VMX-OT4	4	HDBT, RS232, Audio

2. Panel Description

2.1 Front Panel

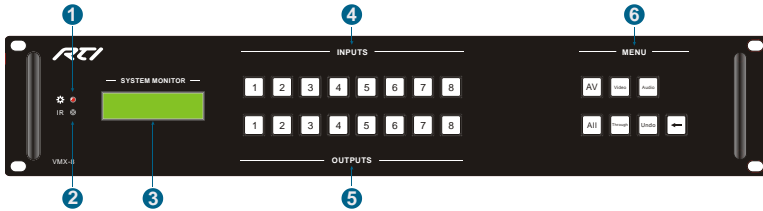


Figure 2- 1 Front Panel

No.	Name	Description
①	Power indicator	Illuminate red once powered on
②	IR	IR sensor, receive IR signal sent from IR remote
③	LCD screen	Display real-time operation status
④	INPUTS	Back-lit buttons for input selection, ranges from 1~ 8, correspond to 1~8 sources on input signal cards (counting from left to right, top to bottom)
⑤	OUTPUTS	Back-lit buttons for output selection, ranges from 1~ 8, correspond to 1~8 displays on output signal cards (counting from left to right, top to bottom)
⑥	MENU	AV: Transfer AV signal from signal card.
		VIDEO: Transfer video signal from signal card only.
		AUDIO: Transfer audio signal from audio card only, but the VMX-8 can't support audio card.
		ALL: Select all input/output channel
		THROUGH: To transfer the signals directly to the corresponding output channels.
		UNDO: Undo button, to resume to the status before the command just performed.
		←: Backspace button, to backspace the last press.

2.2 Rear Panel

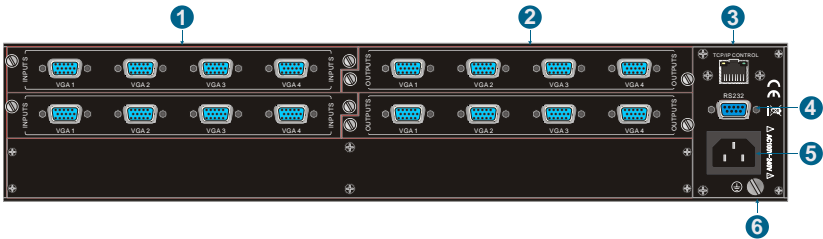


Figure 2- 2 Rear Panel

No.	Name	Description
①	INPUTS	Input signal card slots, 2 in total, insert necessary input cards here
②	OUTPUTS	Output signal card slots, 2 in total, insert necessary output cards here.
③	TCP/IP	(Optional) Used for TCP/IP control port.
④	RS232	Serial control port, connect with RS232 port of control device.
⑤	Power port	Connect with household alternating current power
⑥	GND connector	Used for system grounding.

2.3 Changeable Cards

VMX-8 support expansion through various changeable input/ output cards of different signals including HDMI, twisted pair etc. Here is a brief introduction to the changeable cards.

2.3.1 VMX-IM4 & VMX-OM4

4K HDMI signal card. (Please check the specification from 5.2. 1)

Support HDMI 1.4a& HDCP 1.4 compliance; Compatible with DVI signal; Support high-definition HDMI source up to 4kx2k, 1080p 3D compliance;

Provide auxiliary audio port as supplement to HDMI embedded audio, audio source selectable via RS232 command.

It also boasts embedded EDID management.

Modular Matrix Switcher 8x8

VMX-IM4: input card, maximum four input signal. Input signal can pass to output device through VMX-OM4, or other kinds of output cards.

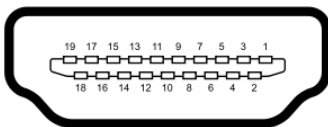


Note: When matching with output cards that do not support 4kx2k, adjust the input resolution to 1080p to enable reliable output.

VMX-OM4: output card, maximum four output signal, output signals from VMX-IM4, or other kinds of input cards, HDCP compliant status settable via RS232 command



Pin layout of the HDMI connectors (female).



No.	Signal	No.	Signal
1	TMDS Data 2+	20	SHELL
2	TMDS Data 2 Shield	19	Hot Plug Detect
3	TMDS Data 2-	18	+5V Power
4	TMDS Data 1+	17	Ground
5	TMDS Data 1 Shield	16	DDC Data
6	TMDS Data 1-	15	DDC Clock
7	TMDS Data 0+	14	No Connect
8	TMDS Data 0 Shield	13	CEC
9	TMDS Data 0-	12	TMDS Clock-
10	TMDS Clock+	11	TMDS Clock Shield

2.3.2 VMX-IT4 & VMX-OT4

4K Twisted pair card (Please check the specification from 5.2.2)

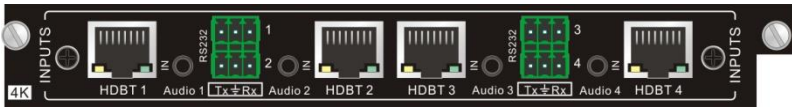
Support HDTV, compatible with HDBT 1.0, HDMI1.4a& HDCP1.4; Wide resolution range from 480p~ 4kx2k, 1080p 3D compliant; Extend HDBT signal up to 70m at 1080p or 40m at 4k; Bi-directional RS232 transmission on single cable; Audio source selectable via corresponding command; Auxiliary audio ports support stereo signal.

It also boasts embedded EDID management.

VMX-IT4: input card, maximum input four HDBT signal. Input signal can pass to output

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device through VMX-OT4, or other kinds of output cards, need to work with HDBT transmitters.



Note: When matching with output cards that do not support 4kx2k, adjust the input resolution to 1080p to enable reliable output.

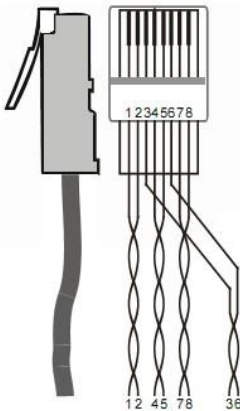
VMX-OT4: output card, maximum output four HDBT signal, output signals from VMX-IT4, or other kinds of input cards, need to work with HDBT receivers.



How the indicators work:

Color	Definition	Status
Yellow	Power Indicator	Blink once powered on; Turn off when there is no power.
Green	Link Indicator	Light when the port is connected with CAT5e/6; Turn off when there is no connection.

Pin layout of the HDBT connector:



Pin	Color
1	orange white
2	orange
3	green white
4	blue
5	blue white
6	green
7	brown white
8	brown

1st Group	4--5
2nd Group	1--2
3rd Group	3--6
4th Group	7--8

Note: Cable connectors MUST be metal one, and the shielded layer of cable MUST be connected to the connector's metal shell, to well share the grounding.

3. System Connection

3.1 Usage Precautions

- System should be installed in a clean environment and has a prop 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.

3.2 Connection Diagram

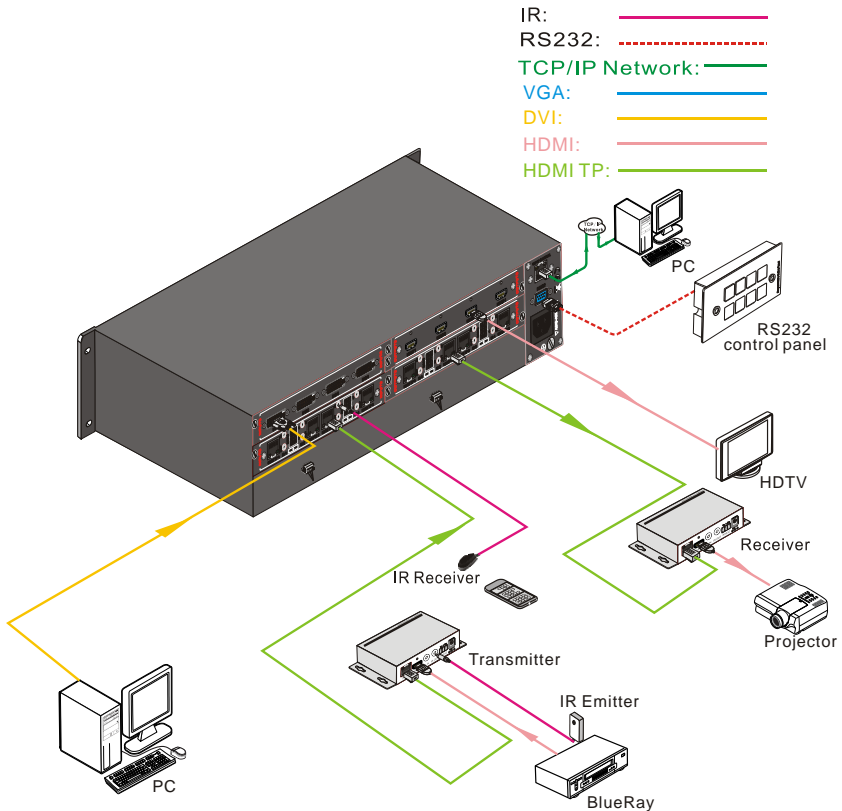


Figure 3- 1 System Diagram

Note: All the input/output signal cards don't support hot-plug while input& output ports on the cards support hot-plug.

4. Control Operations

4.1 Front Panel Button Control

Users can control VMX-8 rapidly and directly with its front panel buttons. Here is a brief operation guide to front panel buttons.

Format: “Input Channel” + “Switch Mode” + “Output Channel”

Note:

1) “Switch Mode”:

AV: Transfer AV signal from AV signal card& audio signal from audio card synchronously

Video: Transfer AV signal from AV signal card

Audio: Transfer audio signal from audio card.

- 2) “Input Channel”: Fill with the number of input channel to be controlled,
- 3) “Output Channel”: Fill with the number of output channels to be controlled. Press “All” to select all the outputs.
- 4) The input/output channels on the rear panel are counting from left to right, top to bottom.
- 5) The input delay time between two numbers of every input& output channel must be less than 5 seconds; otherwise the operation will be cancelled.

Example:

- 1. To transfer input 1 to output 1, press input “1”, output “1”.
- 2. To transfer signals from input 1 to all output channels, press buttons in this order: “1”, “All”.

Functional Buttons:

UNDO button: return to the previous status

Example: Input 6 is connecting with output 6, press input “6” + “AV”+ output 4 to change the connection. Press “Undo” to enable input 6 to reconnect with output 6.

← button: If you press buttons “1”, “AV”, “2”, “←” in order, then “2” will be canceled.

THROUGH button: get straight I/O connection, e.g. input 1-> output 1, input 2-> output 2.

Press “Input Channel” + ”Through”

Example: If you press buttons “ALL”, “THROUGH” in order, then the result will be like input 1→ output 1, input 2→output 2, input 3→output 3 ... input 8→output 8.

4.2 IR Remote Control

With the IR remote, VMX-8 could be controlled remotely. As the function buttons on the IR remote are the same with the ones on the front panel, the IR remote shares the same operations and commands with the control panel.

Press the buttons under below format:

“Input Channel” + “Switch Mode” + “Output Channel”

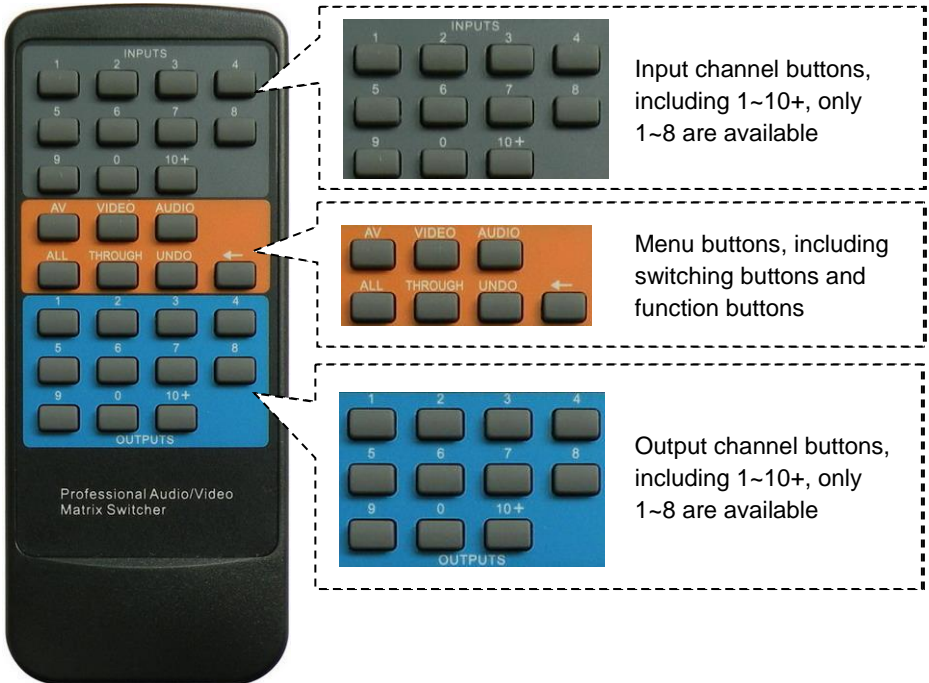


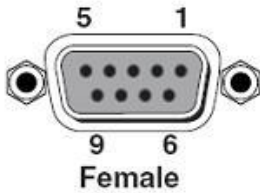
Figure 4- 1 Panel of the IR Remote

4.3 RS232 Control

4.3.1 Connection of RS232 Communication Port

Except the front control panel and IR remote, VMX-8 can be controlled by far-end control system or through the Ethernet control via the RS-232 communication port.

This RS-232 communication port is a female 9- D connector. The definition of its pin layout is shown in the table below.



No.	Pin	Function
1	N/u	Unused
2	Tx	Transmit
3	Rx	Receive
4	N/u	Unused
5	Gnd	Ground
6	N/u	Unused
7	N/u	Unused
8	N/u	Unused
9	N/u	Unused

When VMX-8 connects to the RS232 port of a computer with control software, users can control it by that computer. To control the switcher, users need to use RS232 control software.

4.3.2 RS232 Communication Commands

With this command system, users are able to control and operate the VMX-8 with RS232 software remotely.

Note:

- Please disconnect all the twisted pairs before sending command EDIDUpgrade[X].
- Type the command carefully, it is case-sensitive.
- Commands pertaining to EDID only avails for signal cards that support EDID management.
- VMX-8 boasts 6 in-built EDID data, the chart below illustrates the detailed information:

No.	Detailed Information
1	1080p 2D 5.1CH
2	1080p 2D 2.0CH
3	720p 2D 5.1CH
4	720p 2D 2.0CH
5	4kx2k 2D 5.1CH
6	4kx2k 2D 2.0CH

Update in-built EDID data by sending command **UpgradeIntEDID[x]..**

Communication protocol: Baud rate: 9600; Data bit: 8; Stop bit: 1; Parity bit: none.

4.3.2.1. System Commands

Command	Function	Feedback Example
/*Type;	Report system model	VMX-8
/^Version;	Report firmware version	Vx.x.x
/:MessageOff;	Disable feedback message	Closed The Message Return.
/:MessageOn;	Enable feedback message (Default)	Enabled The Message Return.
Undo.	Cancel the previous operation	Undo
Demo.	Switch to testing mode, switch AV 1>1, 2>2 and so on.	Demo Mode AV: 01->001
/V00.	Report hardware version	Vx.x.x
%0911.	Restore factory default. All I/O connection will be restored to straight through: 1->1, 2->2,...; saved operation status will remain the same.	

4.3.2.2. Lock/unlock Commands

Command	Function	Feedback Example
/%Lock;	Lock front panel button	System Locked!
/%Unlock;	Unlock front panel button (Default)	System Unlock!

4.3.2.3. Switching Commands

Command	Function	Feedback Example
[x]All.	Switch input [X] AV to all output	[X] To All
All#.	Switch all input signal to the corresponding output channel	All Through
All\$.	Switch off all output	All Closed.

[x]#.	Switch input [X] to output [X]	[X] Through
[x]\$.	Turn off output [X]	AV: [X] Closed.
All@.	Turn on all output	All Open.
[x]@.	Turn on output [X]	[X] Open.
[X]V[Y1] [Y2].	Switch input [X] only video to output [Y1] (and all target output in [Y2] and so on).	V: [X]-> [Y1] [Y2]...
[X]A[Y1] [Y2].	Switch input [X] only audio to output [Y1](and all target output in [Y2] and so on)	A: [X]-> [Y1] [Y2]...
[X]B[Y1] [Y2].	Switch input [X] AV signal to output [Y1](and all target output in [Y2] and so on)	AV: [X]-> [Y1] [Y2]...
Status[Y].	Report the input channel on output [Y]	V: [X]-> [Y] A: [X]-> [Y]
Status.	Report the input channel on output channel one by one	V: [X]-> [Y] A: [X]-> [Y] ...
PWON.	Power on the system	PWON
PWOFF.	Turn the system to standby mode	PWOFF

4.3.2.4. Scene Commands

Command	Function	Feedback Example
Save[Y].	Store the current status to present [Y]. [Y] ranges from 1 to 9	Save To F[Y]
Recall[Y].	Recall present [Y]	Recall From F[Y]
Clear[Y].	Clear the present [Y]	Clear F[Y]

4.3.2.5. HDCP Compliance

Command	Function	Feedback Example
HDCPON.	Turn on HDCP output.	HDCPON
HDCPOFF.	Turn off HDCP output.	HDCPOFF

4.3.2.6. EDID Configuration

Command	Function	Feedback Example
UpgradeIntEDID [X].	Upgrade built-in EDID data. When the command applied, system prompts to upload the EDID file (.bin). [X] ranges 1 - 6	Prompt to upload EDID file Upload EDID to system completed
EDIDUpgrade[X]	Upgrade the EDID data of the input port [X]. When the command applied, system prompts to upload the EDID file (.bin). Operation will be cancelled in 10 seconds	Prompt to upload EDID file Upload EDID to input card completed
EDID/[X]/[Y].	Set the built-in EDID data type [Y] to input port [X]	Set system EDID[Y] to input [X]
EDIDG[X].	Get the EDID data from output port [X] and display on serial port	
EDIDMInit.	Reset all input card EDID to all input card	EDIDMInit
EDIDM[Y]B[X].	Set the EDID data of output [Y] on input [X]	EDIDM2B1

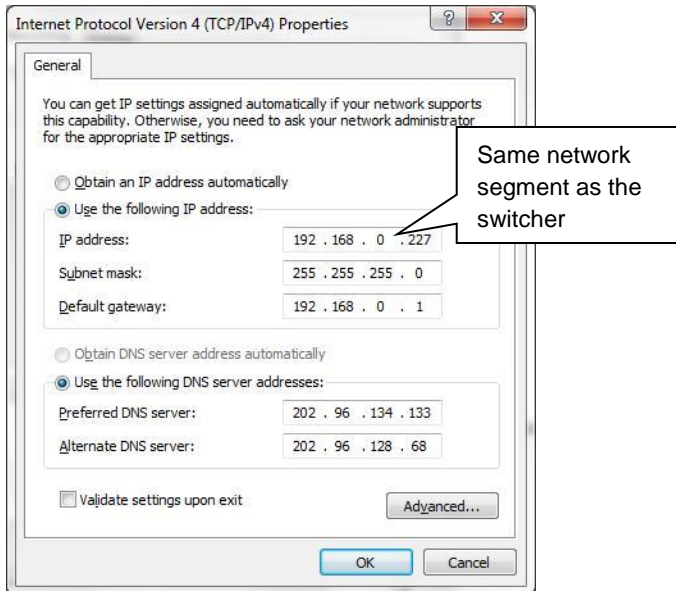
4.4 TCP/IP Control (Optional)

4.4.1 Control Modes

TCP/IP default settings: IP is 192.168.0.178, Gateway is 192.168.0.1, and Serial Port is 4001. IP & Gateway can be changed as you need, Serial Port cannot be changed.

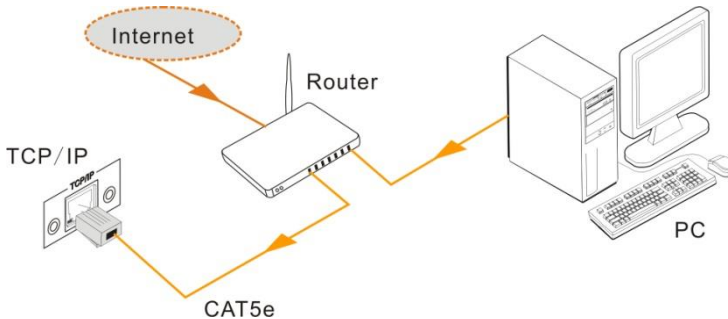
- **Controlled by Single PC**

Connect a computer to the TCP/IP port of the VMX-8, and set its network segment to the same as the default IP of the VMX-8 (192.168.0.178).



● **Controlled by PC(s) in LAN**

The VMX-8 can be connected with a router to make up a LAN with the PC(s), this make it able to be controlled in a LAN. When control, just make sure the VMX-8's network segment is the same with the router. Please connect as the following figure for LAN control.



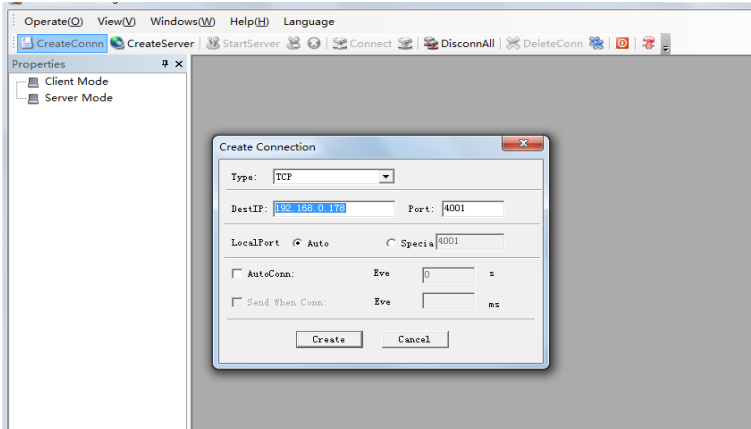
- Step1.** Connect the TCP/IP port of the VMX-8 to Ethernet port of PC with twisted pair.
- Step2.** Set the PC's network segment to the same as the VMX-8. Do please remember the PC's original network segment.
- Step3.** Set the VMX-8's network segment to the same as the router.
- Step4.** Set the PC's network segment to the original one.
- Step5.** Connect the VMX-8 and PC(s) to the router. In the same LAN, each PC is able to control the VMX-8 asynchronously.

Then it's able to control the device via a TCP/IP communication software.

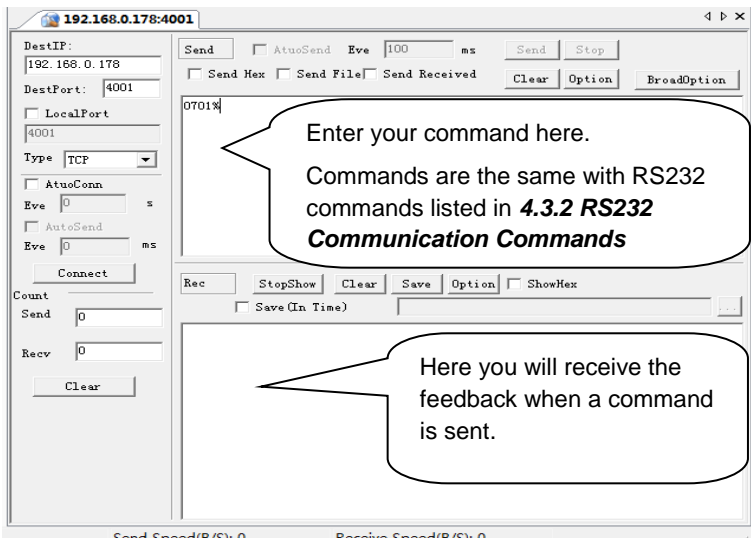
4.4.2 Control VMX-8 via TCP/IP Communication Software

(Exemplated by TCPUDP software)

- 1) Connect a computer and VMX-8 to the same network. Open the TCPUDP software and create a connection, enter the IP address and port of VMX-8 (default IP: 192.168.0.178, port:4001):



- 2) After connect successfully, we can enter commands to control the VMX-8, as below:

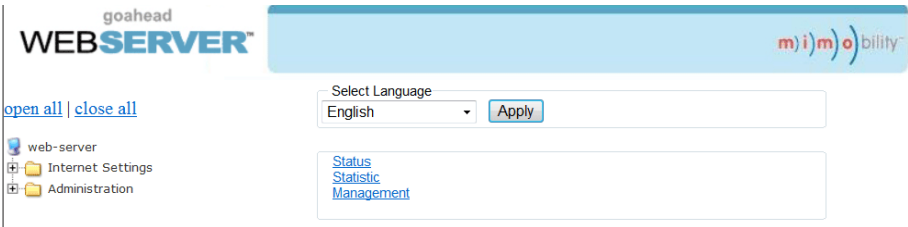


4.4.3 TCP/IP Configuration

Type the designed website 192.168.0.178:100 in your browser. Enter correct username and password to log in the WebServer:

Username: admin; **Password:** admin

Here is the main configuration interface of the WebServer:



In this interface, you can:

- Change website display language
- Modify network settings: Go to Internet Settings -> WAN
- Upgrade TCP/IP module: Go to Administration -> Upload Program -> Select program file -> Start upgrading
Reboot the device after upgrading.

5. Specification

5.1 Main Unit

Control parts	
Serial control port	RS232, 9- female D connector
Configurations	2 = TX, 3 = RX, 5 = GND
Installation	Rack Mountable
Front panel control	Buttons
Options	TCP/IP control
General	
Power Supply	100VAC ~ 240VAC, 50/60Hz
Power Consumption	60W (Max)
Temperature	-10 ~ +40°C
Relative Humidity	10% ~ 90%
Dimension (W*H*D)	483 x 88 x 320mm (2U high)
Net Weight	3Kg

5.2 Changeable Cards

5.2.1 VMX-IM4 & VMX-OM4

VMX-IM4	
Video Input	
Input	4 HDMI
Input Connector	Female HDMI
Min.~Max. Level	T.M.D.S. 2.9V~3.3V
Input Impedance	100Ω (Differential)
Audio Input	
Input	4 Analog
Input Connector	3.5mm pluggable terminal block
Input Impedance	75Ω
Frequency Response	20Hz~20K Hz
VMX-OM4	
Video Output	
Output	4 HDMI
Output Connector	Female HDMI
Min.~Max. Level	T.M.D.S. 2.9V~3.3V
Output Impedance	100Ω (Differential)

Audio Output	
Output	4 Stereo
Output Connector	3.5mm stereo audio connector
Output Impedance	75Ω
Frequency Response	20Hz~20K Hz
General	
Gain	0dB
Max Resolution	4Kx2K
SNR	>70dB @ 100MHz-100M
Return Loss	<-30dB @ 5KHz
Supported Audio Format	Embedded HDMI audio: PCM, Dobby Digital, DTS, DTS-HD Analog audio: PCM
HDMI Standard	Support HDMI1.4& DVI1.0
EDID& HDCP Management	Compliant with HDCP 1.4; Support manual EDID management

5.2.2 VMX-IT4 & VMX-OT4

VMX-IT4	
Video Input	
Input	4 HDBT
Input Connector	4 Female RJ45 (with dual-color indicator)
Min.~Max. Level	T.M.D.S 2.9V~3.3V
Input Impedance	100Ω (Differential)
Audio Input	
Input	4 Stereo
Input Connector	3.5mm stereo audio connector
Input Impedance	75Ω
Frequency Response	20Hz~20K Hz
VMX-OT4	
Video Output	
Output	4 HDBT
Output Connector	4 Female RJ45 (with dual-color indicator)
Min.~Max. Level	T.M.D.S 2.9V~3.3V
Output Impedance	100Ω (Differential)

Audio Output	
Output	4 Stereo
Output Connector	3.5mm stereo audio connector
Output Impedance	75Ω
Frequency Response	20Hz~20K Hz
Control Part	
Control Signal	4 RS232
Control Connector	3-pin pluggable terminal block
Protocol	TCP/IP
General	
Gain	0dB
Bandwidth	10.2Gbps
Max Resolution	4Kx2K
Crosstalk	<-50dB@5MHz
Transmission Distance	1080P≤70m; 4Kx2K ≤ 40m
Supported Audio Format	Embedded HDMI audio: PCM, Dobby Digital, DTS, DTS-HD Analog audio: PCM
HDMI Standard	Support HDMI1.4a
EDID& HDCP Management	Compliant with HDCP 1.4; Support manual EDID management

6. Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
Output image with ghost	Bad quality of the connecting cable	Try another high quality cable
	Improprate image setting of the displayer	Adjust corresponding image settings
Output image with color losing or no video signal output	Fail connection	Reconnect the displayer and the matrix
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
	The switcher is broken	Send it to authorized dealer for repairing.
IR remote does not work	Run out of battery	Change for another battery
	IR remote is broken	Send it to authorized dealer for repairing.
POWER indicator doesn't work or no respond to any operation	Fail connection of power cord.	Make sure the power cord connection is good.
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.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.

Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Type in correct RS232 communication parameters.
	Broken RS232 port	Send it to authorized dealer for checking.
Cannot control the device by front panel buttons while can control it through RS232 port	The front panel buttons are locked	Send command !%Unlock ; to unlock the front panel buttons.
Cannot control the device by RS232 / IR remote / front panel buttons	The device has already been broken.	Send it to authorized dealer for repairing.

If your problem still remaining after following the above troubleshooting steps, please find further assistance.

7. Contacting RTI

For news about the latest updates, new product information, and new accessories, please visit our web site at:

www.rticorp.com

For general information, you can contact RTI at:

Remote Technologies Incorporated

5775 12th Ave. E Suite 180

Shakopee, MN 55379

Tel. (952) 253-3100

Fax (952) 253-3131

info@rticorp.com

8. Service & Support

If you are encountering any problems or have a question about your RTI product, please contact RTI Technical Support for assistance (see the Contacting RTI section of this guide for contact details).

RTI provides technical support by telephone, fax or e-mail. For the highest quality service, please have the following information ready, or provide it in your fax or e-mail.

- Your Name
- Company Name
- Telephone Number
- E-mail Address
- Product model and serial number (if applicable)

If you are having a problem with hardware, please note the equipment in your system, a description of the problem, and any troubleshooting you have already tried.

Please do not return products to RTI without a return authorization.



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