



# VMX-16

16x16 Modular Video Matrix

## Reference Guide



### Product Contents

- 1x VMX-16
- 4x Plastic Cushions
- 1x RS-232 Cable
- 1x Power Cord
- 1x Reference Guide

### 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.

### Cleaning

To clean this product, lightly dampen a lint-free cloth with plain water or a mild detergent and wipe the outer surfaces.  
 NOTE: Do not use harsh chemicals as damage to the unit may occur.

### Federal Communications Commission Notice

This equipment 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 residential installation. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.  
 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. However, there is no guarantee that interference will not occur in a particular installation.  
 If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

### Industry Canada Compliance Statement

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s). Son fonctionnement est soumis aux deux conditions suivantes:

1. Ce dispositif ne peut causer des interférences nuisibles.
2. Cet appareil doit accepter toute interférence reçue y compris des interférences qui peuvent provoquer un fonctionnement indésirable.



**DECLARATION OF CONFORMITY (DOC)**  
 The Declaration of Conformity for this product can be found on the RTI website at: [www.rticorp.com/declaration](http://www.rticorp.com/declaration)

### Contacting RTI

For news about the latest updates, new product information, and new accessories, please visit our web site at: [www.rticorp.com](http://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**

### 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 or e-mail. For the highest quality service, please have the following information ready:

- 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 return authorization.\***

### Limited Warranty

RTI warrants new products for a period of three (3) years (excluding consumables such as rechargeable batteries which are warranted for one (1) year) from the date of purchase by the original purchaser (end user) directly from RTI / Pro Control (herein referred to as "RTI"), or an authorized RTI dealer.  
 Warranty claims may be initiated by an authorized RTI dealer using the original dated sales receipt or other proof of warranty coverage. In the absence of the receipt of purchase from the original dealer, RTI will provide warranty coverage extension of six (6) months from the date code of the product. Note: RTI warranty is limited to the provisions set forth in this policy and does not preclude any other warranties offered by third parties who are solely responsible for those other warranties.

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

- Product purchased via unauthorized sellers or internet sites will not be serviced—regardless of purchase date.
- Damages caused by accident, misuse, abuse, neglect or acts of God.
- Cosmetic damage, including, but not limited to, scratches, dents and normal wear and tear.
- Failure to follow instructions contained in the Product Installation Guide.
- Damages due to products used in an application or environment other than that for which it was intended, improper installation procedures or adverse environmental factors such as incorrect line voltages, improper wiring, or insufficient ventilation.
- Repair or attempted repair by anyone other than RTI and Pro Control or authorized service partners.
- Failure to perform recommended periodic maintenance.
- Causes other than product defects, including lack of skill, competence or experience of user.
- Damage due to shipment of this product (claims must be made to the carrier).
- Altered unit or altered serial number: defaced, modified or removed.

RTI is also not liable for:

- Damages caused by its products or for failure of its products to perform, including any labor costs, lost profits, lost savings, incidental damages, or consequential damages.
- Damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation, commercial loss, any claim made by a third party or made on behalf of a third party.
- Loss of, or damage to, data, computer systems or computer programs.

RTI's liability for any defective product is limited to repair or replacement of the product, at the sole discretion of RTI.  
 In cases where the warranty policy conflicts with local laws, the local laws will be adopted.

### VMX-16 16x16 Modular Video Matrix

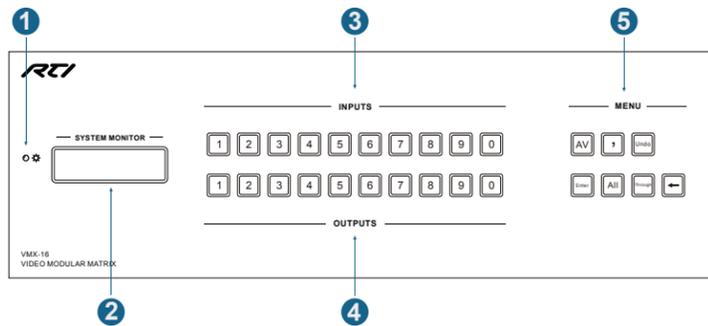
The VMX-16 is a high-performance modular matrix switch chassis for professional distribution of up to 16 video sources to 16 displays. The video format of the inputs and outputs can be customized to the exact needs of a project utilizing a range of optional I/O cards. The VMX-16 enables cross-point switching from any input to any output, and supports high resolution video output at 4K. With its flexible design, VMX-16 is the perfect solution for signal switching and distribution in commercial multimedia applications, such as conference rooms, control rooms, hotels, and retail spaces.

The VMX-16 provides superior quality and reliability as well as these features:

- Modular chassis with configurable I/O slots, ranging from 4x4 to 16x16.
- Optional input cards for 4 x HDMI, HDBaseT, DVI and VGA available.
- Optional output cards for 4 x HDMI or HDBaseT available.
- HDCP 1.4 compliant and DVI compatible, supporting HDMI 1.4a & DVI 1.0
- Powerful EDID management.
- HDBaseT output cards transmit HDMI@1080p up to 230 feet (70m) over a Cat5E/6 cable (130ft/40m at 4Kx2K).
- Supports multiple control methods, including front panel, RS-232, and TCP/IP.
- LCD indicator shows connection status, switching status, HDCP status, and output resolution.
- Power off memory.
- Dual power supplies.
- Easy installation with rack-mount design.

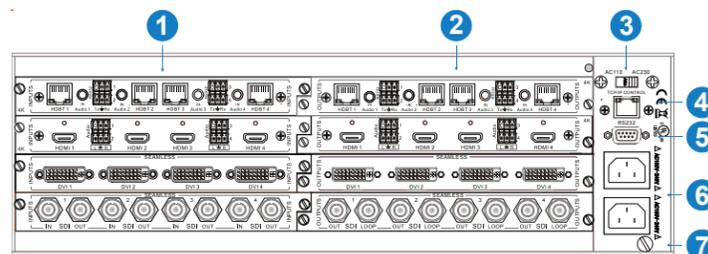
# Installation & Operation

## FRONT PANEL DESCRIPTION



No.	Name	Function
1	Power Indicator	Turns red when power on.
2	LCD Screen	Displays real-time operation status.
3	INPUTS (1~8)	Select the input channel.
4	OUTPUTS (1~8)	Select the output channel.
5	MENU	<b>AV:</b> Simultaneously transfer audio and video signal. <b>r</b> : Used to divide the output channels when switching an input to more than one output channel. <b>Undo:</b> Cancel the previous operation. <b>Enter:</b> Confirm switching operation. Operation will not be executed without pressing "Enter" <b>All:</b> Select all input or output channels. <b>Through:</b> Transfer the inputs directly to their corresponding output channels. <b>←:</b> Backspace - withdraw last button press.

## REAR PANEL DESCRIPTION



No.	Name	Function
1	INPUTS	Input signal card slots, 4 in total, insert necessary input cards. <b>IMPORTANT NOTE:</b> Please remove power cord before installing output signal cards.
2	OUTPUTS	Output signal card slots, 4 in total, insert necessary output cards. <b>IMPORTANT NOTE:</b> Please remove power cord before installing output signal cards.
3	AC110/230	AC voltage selection switch. <b>IMPORTANT NOTE:</b> This must be set to the appropriate voltage setting prior to installing the power cord.
4	TCP/IP	TCP/IP control port, connect to Ethernet network.
5	RS-232	Serial control port, connect to control system.
6	Power Ports	Connect main alternating current power to one of the ports. The second port is an optional connection for redundant power (backup power supply in case primary power source is lost).
7	GND	Ground connection.

## INSTALLING INPUT/OUTPUT SIGNAL CARDS

The VMX-16 does NOT support hot swapping of IO signal cards.

To install/remove an IO card:

- 1) Unplug the power cord
- 2) Install a new card: Slowly insert the signal card along the slot of the matrix chassis, and tighten the captive screws.
- 3) Remove a card: Loosen the captive screws, and then slowly take out the signal card along the slot of the matrix chassis.
- 4) Reconnect the power cord.

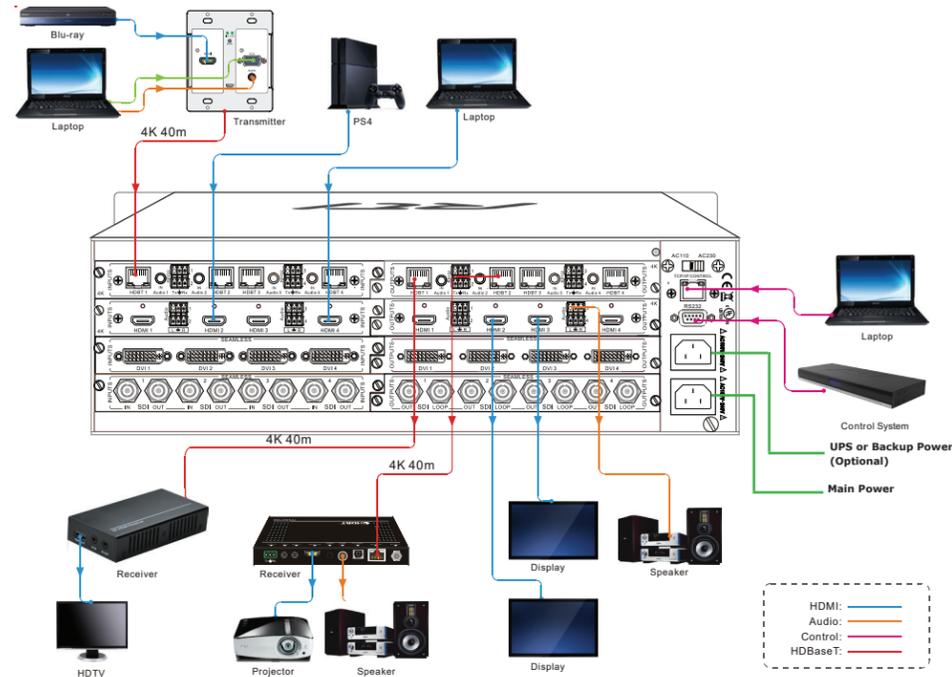
## INPUT SIGNAL CARDS

No.	Model	Description
1	VMX-IM1	1080p seamless HDMI input card with 4 HDMI and 4 external L+R audio ports.
2	VMX-ID1	1080p seamless DVI input card with 4 DVI ports.
3	VMX-IV1	1080p VGA input card with 4 VGA and 4 external L+R audio ports.
4	VMX-IS1	1080p seamless SDI input card with 4 SDI input and 4 loop output ports.
5	VMX-IM4	4K HDMI input card with 4 HDMI, and 4 external L+R audio ports.
6	VMX-IT4	4K HDBaseT input card with 4 HDBT, 4 RS-232 and 4 external stereo audio ports.
7	VMX-IT1	1080p HDBaseT input card with 4 HDBT, 4 RS-232 and 4 external stereo audio ports.

## OUTPUT SIGNAL CARDS

No.	Model	Description
1	VMX-OM1	1080p seamless HDMI output card with 4 HDMI and 4 external L+R audio ports.
2	VMX-OM4	4K HDMI output card with 4 HDMI and 4 external L+R audio ports.
3	VMX-OT4	4K HDBaseT output card with 4 HDBT, 4 RS-232 and 4 external stereo audio ports.
4	VMX-OV1	1080p seamless VGA output card with 4 VGA and 4 external L+R audio ports.
5	VMX-OT1	1080p HDBaseT output card with 4 HDBT, 4 RS-232 and 4 external stereo audio ports.

## CONNECTION DIAGRAM



## BUTTON CONTROL

**Signal Switching:** To assign inputs to outputs press: "Input Channel" + "Switch Mode" + "Output Channel" + "Enter".

Example: Set input 1 to output 2 - press buttons "1" + "AV" + "2" + "Enter"

- "Input Channel": Fill with the number of input channel to be controlled.
- "Output Channel": Fill with the number of output channels to be controlled.
  - Press "All" to select all the outputs.
  - Press "r" button to separate multiple I/O channels
  - Press "ENTER" button to confirm the operation.

Notes:

- The input/output channels on the rear panel are counting from left to right, top to bottom.
- The delay time between button presses must be less than 5 seconds; otherwise the operation will be cancelled.

## Additional Functions

**UNDO:** Return to previous status.

- Example: Input 6 > Output 6, pressing "Input 6" + "AV" + "Output 4" + "Enter" changes output status. Pressing "Undo" will set input 6 back to output 6.

← : Backspace: Withdraws last button press.

- Example: If you press buttons "1", "AV", "2", "←" in order, then "2" will be canceled.

**THROUGH:** Press "Input Channel" + "Through"

- Example: Pressing buttons "ALL", "THROUGH" in order switches all inputs to corresponding outputs 1-16 (input 1 to output 1, input 2 to output 2, etc)

## RS-232 CONTROL

For control using serial communication from a control system, wire the RS-232 output of the control system to the VMX-16 RS-232 DB9 connector.

- Baud rate: 9600, Data bit: 8, Stop bit: 1, Parity bit: none
- DB9 Pinout: Transmit: Pin 2, Receive: Pin 3, Ground: Pin 5

## TCP/IP - GUI CONTROL

For control using TCP/IP protocol from an RTI control system or the web GUI, wire the Ethernet port of VMX-16 TCP/IP connector to the LAN set to the same network segment. NOTE: IP and gateway can be changed as needed.

- Default IP: 192.168.0.178 • Subnet Mast: 255.255.255.0 • Gateway: 192.168.0.1 • Serial Port: 4001

**Web GUI:** Type the IP address <http://192.168.0.178:100> into the browser address bar, then type username and password (both of them are "admin").

## INSTALLATION

Please visit the RTI dealer portal ([www.rticorp.com/dealer](http://www.rticorp.com/dealer)) for additional instructions and specifications.

NOTE: Features and specifications subject to change without notice.