Product Contents

- VHU-8x 8x10 HDBaseT Matrix Switcher
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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

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

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 warrantied 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.

VHU-8x

8x10 Video & Audio Matrix Switcher Kit

Reference Guide

VHU-8x 8x10 Video & Audio Matrix Switcher Kit

The VHU-8x 8x10 HDBaseT matrix switcher is used for convenient viewing of up to eight video sources distributed to up to ten displays. The VHU-8x 8x10 Matrix Switch features eight HDMI inputs, eight HDBaseT Class C + DSC outputs and two HDMI outputs. The VHU-8x enables cross-point switching from any input to any output and supports high resolution video up to 492ft (150m) and a 4K signal up to 328ft (100m) using Display Stream Compression. The kit includes eight VXT-URx HDBaseT Class C + DSC Receivers which feature power over HDBaseT, bi-directional IR, RS-232 and audio return channel (ARC). Additional features include powerful CEC control and HDCP 2.2 compliance.

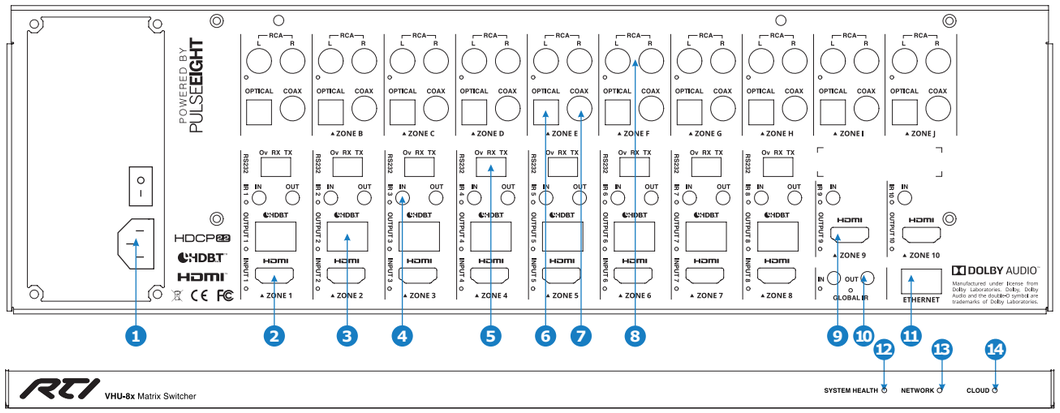
The VHU-8x is loaded with installer-friendly features to simplify setup and enable ongoing support. The matrix utilizes auto-discovery and a web-based interface for fast and convenient configuration of connected devices. In addition, a suite of diagnostics capabilities, including built-in cable quality testing and remote monitoring, ensure a successful installation and quick troubleshooting.

The VHU-8x provides superior quality and reliability as well as these features:

- Supports 4K video transmission, 1080p, 3D and deep color.
- Full HDCP 2.2 support.
- 8x HDMI inputs.
- 8x HDBaseT Class C + DSC outputs.
- 2x HDMI outputs.
- Audio return channel (ARC).
- HDMI-CEC bi-directional control.
- Bi-directional IR control.
- Automatic RTiQ integration.
- Automatic EDID management.
- Kit includes eight VXT-URx PoH Receivers.

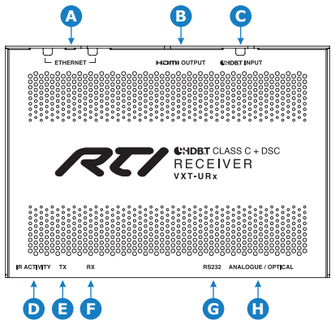
Installation & Operation

VHU-8x FRONT AND REAR PANEL DESCRIPTION



No.	Name	Function
1	Power	After setup is complete, connect the power cable and press the power on switch.
2	HDMI Inputs	Connect your video sources to the HDMI input ports using a High Speed HDMI cable (not supplied).
3	HDBaseT Outputs	For connection to a VXT-URx receiver via category (Cat5e/6/7) cable.
4	Infrared In	Connect to IR output of control processor. IR signals sent from control processor are available at the VHU-8x IR outputs, and they are transmitted to the HDBaseT receivers via Cat cable. NOTE: Requires OPT-1x IR Adapter Cable (sold separately) with mono end (white connector) plugged into the control processor.
	Infrared Out	Connect IR Emitter* for control of video source. *See Initial Setup.*
5	RS-232	Phoenix Connector: Signals at RS-232 voltage levels. 0V = Zero volts (GND). TX is signal coming out of matrix (from remote device) RX is signal going into matrix (to remote device).
6	Optical	Digital optical ports - Connect to TOSLINK receiver of audio device.
7	Coax	Digital coax ports - Connect to Coaxial S/PDIF receiver of audio device
8	RCA	Analog RCA ports - Connect to analog input of audio device.
9	HDMI Outputs	Connect an HDMI cable to local display. If required, this output can be extended using an additional VXT-UTx HDBaseT Transmitter and VXT-URx Receiver (not supplied).
10	Global Infrared	Global In - allows control system to control the VHU-8x switching by sending IR code sequences. Global Out - returns an aggregate IR signal from the RX port of every receiver. Connect via OPT-1x Opto-coupling IR Cable.
11	Ethernet	Connect a standard Ethernet cable (while the matrix is disconnected from the power source) from your router or network switch. NOTE: Cross over cables are not supported.
12	System Health LED	LED solid green when system is running correctly.
13	Network LED	Solid green LED indicates connected to the internet. Flashing green - system cannot reach the internet. Flashing yellow - Discovering IP address. Solid yellow - Has IP address but cannot ping router. Solid red - No network connected.
14	Cloud LED	LED solid green when system is connected to RTiQ.

VXT-URx DESCRIPTION



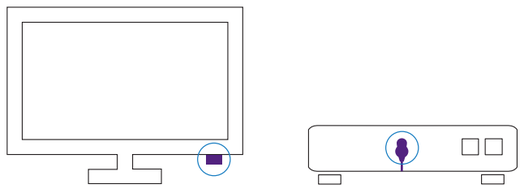
No.	Name	Function
A	Ethernet Ports (x2)	10/100 Ethernet connection for remote devices (e.g. SmartTV).
B	HDMI Output	Connect an HDMI cable between this port and the display.
C	HDBaseT Input	Connect category (Cat5e/6/7) cable between this port and the Matrix Switcher.
D	IR Activity Indicator	LED will illuminate when infrared signal is detected.
E	Infrared TX	Connect IR emitter* for control of display. *See Initial Setup.*
F	Infrared RX	Connect IR receiver.
G	RS-232 Port	RS-232 Port: 3.5mm stereo pinout: Tip=TX, Ring=RX, Sleeve=GND. Connect serial cable via adapter (not included) for control of remote device.
H	Analogue/Optical	Connect Mini-Toslink (adapter not included) audio cable from TV.

INFRARED INSTALLATION (OPTIONAL)

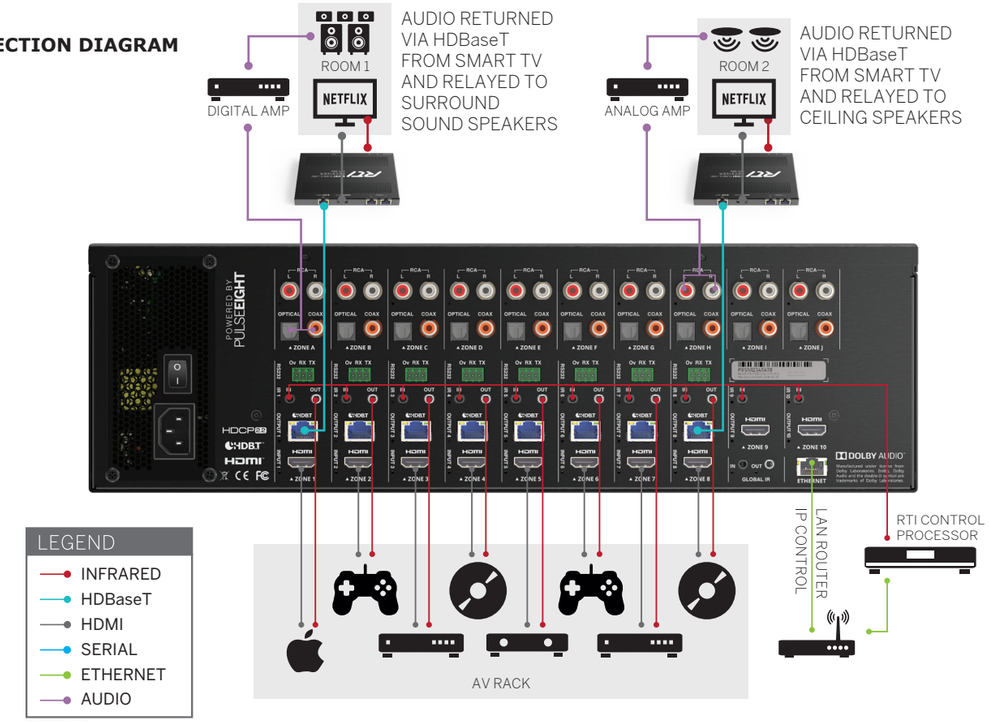
The IR Emitter is to be mounted over the source's IR window. The IR Receiver bud should be mounted underneath the display (TV) with the smallest end forwards and the sticky pad affixed upwards.

IR Receiver: Square with a shiny surface

IR Emitter: Identified by a matte surface



CONNECTION DIAGRAM



INITIAL SETUP

- Connect a standard Ethernet cable (while the matrix is disconnected from the power source) from your router or network switch.
- Connect your source devices into the HDMI input ports using a High Speed HDMI cable or better (not supplied).
- Connect category (Cat5e/6/7) cable between the VHU-8x matrix Output port and the VXT-URx receiver. Complete the connection from the receiver to the Display device via an HDMI cable.
- Connect audio devices to either the RCA, Optical or Coax ports to relay sound to external speakers.
- Once all connections have been made, connect the power supply cable and turn the matrix on by pressing the power switch .

IMPORTANT NOTES:

* Must use included IR emitters. RTI vIRsa Mouse IR emitters and third-party IR emitters will not work.

** IR pass-through from an RTI control processor requires a OPT-1x Opto-coupling IR Adapter Cable (sold separately).

CONFIGURING NETWORK SETTINGS

- The system is designed to be on and connected to an active Internet connection at all times. It will operate correctly without being connected to a network (or the internet) but certain functions will not be available including RTiQ.
- By default the matrix is set to retrieve an IP address via DHCP. You must connect the system to a router or server that has DHCP enabled. Once initially configured you can modify this setting and switch to a static IP address.
- Ensure that the new settings are correct before saving as you will no longer be able to access the matrix if they are incorrect.
- In order for the internet based functions to operate such as the RTiQ and gotomymatrix.com you must provide at least one valid DNS address. We recommend using the Google Public DNS address 8.8.8.8 for Primary DNS and 8.8.4.4 for Secondary.
- NOTE: To configure the system from its defaults, a local network connection is required. Normal operation of the CEC and IR control systems does not require any network connection, but IP based control or Web based control does require a persistent network connection.

CONNECT TO THE WEB INTERFACE

- The built-in web interface can be accessed from any locally connected device (ex. PC, tablet) via Wi-Fi or wired network connection.
- The network LED on the front of the matrix must be a solid green, indicating an internet connection.
- Access the web interface by visiting www.gotomymatrix.com using any web browser.
- The home page of the UI displays the current matrix routing. Highlighted devices are active.
- Many functions are not visible to the user during normal operation, to access these advanced options click on the 'Monitoring' link on the left side navigation, then click on the '[Admin]' link at the foot of the page and login - the default password is ***admin***.

IP CONTROL VIA RTI CONTROL SYSTEM

- TCP/IP: For IP control via an RTI control system, the VHU-8x must be set to the same network segment as the RTI control processor.
- Visit the rticorp.com dealer website to download the driver used in the RTI control system programming.

AUDIO SETUP

- Source Mode (Default): In Source Mode, Zones I and J are not used. In this mode, the audio received via the corresponding HDMI/HDBaseT input port is always provided via the down-mixed 2ch RCA connections and the Digital outputs in the original Dolby 5.1 bitstream formats.
- Sink Mode: In Sink mode, each audio output matches the audio sent to the corresponding HDBaseT/HDMI Output. In addition, when the Sink device (e.g. Display) connected to the Output is consuming local content (e.g. SmartTV app), via ARC or Optical Audio Return, this audio is rendered instead in the corresponding Audio output ports. In all scenarios the RCA ports provide down-mixed 2ch Audio. When in Sink Mode, each port may be modified to adjust the Audio Delay to resolve Lip Sync issues and also adjust the Volume Level (Loudness). If the connected Sink device supports CEC, then adjusting the Volume level on the Sink device will adjust the volume level on the matrix.

SETTING UP CEC

- CEC is often disabled by default, and you may need to enable it in the settings menu before continuing. NOTE: Manufacturers use different names for CEC (Anynet+, Bravialink etc)
- The brand/model of TV will determine which button to press to see a list of source devices. For example, on a Sony TV, press the "Sync Menu" button, this brings up a menu, from here select HDMI Device and your source devices are listed.
- In other brands, simply pressing the "Source" button will list all of the devices alongside other inputs (such as Network or USB media).