Product Contents

- Miravue VIP-1
- 5V 2.4A power supply
- Operations 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.

CONTAINS:
FCC ID: NKR-DNUAP01
IC: 4441A-DNUAP01

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.

VIP-1

RTI | Miravue Video Over IP Transceiver

Reference Guide

Miravue VIP-1 Video Over IP Transceiver

The Miravue VIP-1 provides AV distribution over wired and wireless Ethernet networking in the connected home or office. The VIP-1 encodes H.264 video up to its highest supported resolution (1080p) along with audio (Dolby 5.1). The result is a high quality video output signal with low network bandwidth requirements. For the ultimate in flexibility, the VIP-1 can be installed as a transmitter or receiver, and acts as an extension of the RTI control system, delivering IR and RS-232 control to devices.

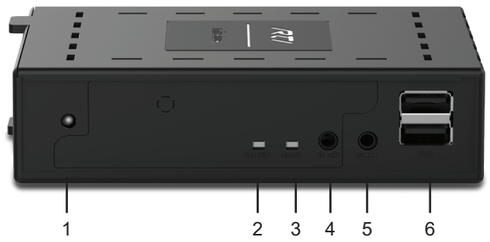
Miravue VIP-1 features:

- Miravue VIP-1 can be installed as a transmitter or a receiver.*
- Supports video distribution via wired and wireless Ethernet.*
- Supports HDMI/HDCP 1.x and 2.x video sources and displays (H.264).
- Integrates network video streams (e.g., IP Cameras).
- Built-in scaler matches the display's maximum resolution.
- Forwards IR and RS-232 commands from an RTI control system.
- Automatically provides stereo downmix with lipsync adjust for distributed audio systems.

* Refer to Networking Equipment and Configuration section

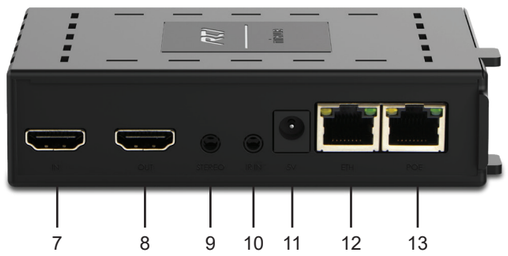
Installation & Operation

FRONT PANEL DESCRIPTION



No.	Name	Function
1	IR Receiver	Used for infrared control of the VIP-1 via a remote control or control system.
2	Default	Button resets the VIP-1 to factory defaults if pressed and held for 10 seconds.
3	Reset	Button power cycles the VIP-1 if pressed and released.
4	IR Output	- Port delivers infrared control to an external device (e.g. TV, Satellite Receiver) from an RTI control system. - Connect standard IR emitter to 3.5mm jack. NOTE: VIP-1 must be configured as an expansion device in the Integration Designer system file.
5	RS-232	- Port delivers serial communication to an external device (e.g. Projector, Blu-Ray) from an RTI control system. - Connect a three wire cable (Tx, Rx, and GND) between 3.5mm jack and external device. - RS-232 Jack Pinout: Tip=Rx In, Ring=Tx Out, Sleeve=GND NOTE: VIP-1 must be configured as an expansion device in the Integration Designer system file.
6	USB 1-2	USB port is used for firmware updates (via USB thumb drive), an extra LAN port when needed (via USB to RJ45 dongle), and keyboard input (not KVM). Valid keys (select, up, down, left, right) to display and navigate the on-screen list of available sources.

REAR PANEL DESCRIPTION



No.	Name	Function
7	HDMI Input	- HDMI port for connection to a video source (e.g. Cable/Satellite Receiver, Blu-ray Player, Streaming Media Player etc.) - Refer to the VIP-1 product webpage on dealer portal for supported video resolutions, audio formats, and HDMI/HDCP devices.*
8	HDMI Output	- HDMI port for connection to a display (e.g. TV, projector) or to an HDMI pass-through device (e.g. Sound Bar, AV Receiver). - Refer to the VIP-1 product webpage on dealer portal for supported video resolutions, audio formats, and HDMI/HDCP devices.*
9	Stereo Audio Output	- Stereo audio port (3.5mm) for connection to an external device's audio input port (ex. Sound bar, Audio Matrix). NOTE: This analog audio stream can be delayed for lip sync adjust for either the video source or the video display, but not both.
10	IR Input	- Port for infrared control of the VIP-1 from a control system. - Connect mono cable between the 3.5mm j and a control processor IR output. NOTE: The built-in IR receiver on the front panel is disabled when this jack is in use.
11	Power	Connects to the included 5VDC/2.4Amp power supply. NOTE: Power may also be supplied to the VIP-1 via the PoE (Power-over-Ethernet) port.
12	Ethernet 2	UNSUPPORTED - This port is not supported and should not be used. NOTE: Check the VIP-1 product support webpage for updates regarding the use of this port.
13	Ethernet - PoE	Connects to an Ethernet network switch (10/100/1000MB) using Ethernet cable (Cat-5/6/7) up to 100m/330ft. NOTE: Refer to the "VIP-1 Configuration" section or the VIP-1 product webpage on the dealer portal for important information.

VIP-1 CONFIGURATION

Using RTI Control System (Recommended)

- **Configuration via Integration Designer:** For instructions, visit the VIP-1 product webpage found in the dealer portal of the rticorp.com website.

Without RTI Control System

- **Configuration via Web Interface -** Wire the VIP-1 to the Ethernet network and enter the VIP-1 IP address into a web browser on a PC connected to the same network. Enter the configuration settings and press "Save" button at the bottom of the web interface.
- NOTE: Wire the VIP-1 HDMI output to a display to view the IP address. If no DHCP server is found, the VIP-1 will assign a default IP address. In this case, verify the VIP-1 and the web browser device (PC, tablet) are configured to the same network (ie. IP range, subnet mask, gateway, etc.).

Firmware Updates

Please refer to the firmware update instructions included with the update file.

Firmware updates are available on the rticorp.com dealer portal and may be installed via a USB drive (recommended) or the VIP-1 web interface.
NOTE: All VIP-1's should have the same firmware version installed.

- **Via USB:** Copy the file to a USB drive and rename the file to "TRNHD.bin". With the USB drive plugged into the VIP-1, power cycle the VIP-1. The update will begin automatically and may be monitored via a display connected to the HDMI output. IMPORTANT NOTE: Do NOT power off the VIP-1 until the update process is complete.
- **Via Web Interface:** Select the firmware update file using the "File Browse" feature and proceed with the update.

NETWORKING EQUIPMENT AND CONFIGURATION

Refer to the VIP-1 product webpage on the dealer portal for wiring diagrams, supported audio/video formats, network settings, HDMI/HDCP devices etc.

*** FOR BEST PERFORMANCE:**

- It is critical that the networking equipment and "transmit mode" (unicast/multicast) are selected properly or network performance will be negatively affected.
- Systems requiring more than 6 VIP-1's should use a managed network switch.
- Each video stream occupies 15Mb of bandwidth. The total bandwidth depends on the number of video sources and transmit mode (unicast/multicast).
- The VIP-1 should be installed as a video transmitter or a receiver. NOTE: While the VIP-1 may be installed as a transceiver (simultaneously transmitting and receiving video), this implementation should be tested with the video devices and network equipment that will be used.
- Video distribution via wireless Ethernet should utilize a separate wireless network using the 5GHz frequency and wired to the same network. Also, due to bandwidth requirements, limit the number of VIP-1's to one or two set to Unicast transmit mode.
- Due to an HDCP limitation, there is a maximum of 32 video connections (simultaneous views) to a video source encrypted with HDCP.

Choosing the Right Network Switch

Managed network switches with increased feature sets will improve network performance, however, additional setup is required.

- Small systems: Unmanaged gigabit switch can be used for smaller installations (up to 6 VIP-1's set to unicast mode).
- Medium Systems: Managed gigabit switch with IGMP snooping with query.
- Large Systems: Fully managed gigabit switch with IGMP snooping with query and vLAN configured for Miravue VIP-1 traffic.

Unicast and Multicast Modes

Refer to the VIP-1 product webpage on the dealer portal for important information on transmit modes.

- **Unicast Mode:** Unicast mode is generally recommended and is useful for small networks or for wireless video distribution. In this mode, the VIP-1 delivers a separate video stream from a source to each display (displays do not share video streams). If a source is not being viewed, there is no stream on the network for that source.

NOTE: In Unicast Mode, the maximum simultaneous streams from a single video source is four. If more than four simultaneous connections to a single video source are required, multicast mode should be used.

- **Multicast Mode:** In this mode, the VIP-1 delivers the video stream from each video source to multiple displays.

NOTE: Caution must be taken in this mode because the video stream is delivered to every device on the network, negatively affecting network performance. Therefore, multicast mode is only recommended when a network switch with "IGMP Snooping with Query" is used, and a VLAN or a separate network is used. IGMP Snooping with Query allows only the desired video stream to be sent to the corresponding VIP-1, reducing network traffic and minimizing the risk of flooding a network with unwanted packets.

CONNECTION DIAGRAM