

## FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communications Commission (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. ([www.rticorp.com/declaration](http://www.rticorp.com/declaration))

## 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.** Use only power sources of the type described in the operating instructions, or as marked on 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:

- 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 new products for a period of three (3) years 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:

- 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.

## 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, 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](mailto: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, or provide it in your 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.**



# VHR-1 HDBT Receiver

## Quick Reference Guide



The VHR-1 HDBT Receiver provides a convenient and cost effective solution for viewing HD video in remote locations. The RTI video distribution system utilizes HDBaseT technology to deliver high resolution video and control of remote devices via the VHR-1.

## Key Features

The VHR-1 provides superior quality and reliability as well as these specific features:

- HDBaseT receiver for VHD-4, VHD-8 and VHT-1.
- Support for high resolution video at 4K, 3D and 1080p.
- Utilizes HDBaseT technology for HDMI video, IR & RS-232 control and power over Cat5e/6 cable.
- Transmits HDMI video at 1080p resolution up to 230ft (70m) and 4Kx2K up to 115ft (35m)
- Powered via PoC (Power over Cable) from VHD4/8 HDBT Matrix Switch or VHT-1.
- One infrared emitter output for control of remote devices.
- One RS232 output for two-way control of remote devices.
- Sturdy steel construction.

### Product Contents

Contents within the box include the following items:

- One (1) VHR-1 HDBaseT Receiver
- Two (2) Mounting wings with screws (4)
- Four (4) Plastic feet
- One (1) Operation Guide

### Installation & Operation

#### MOUNTING

The VHR-1 can be located on a secure, flat surface or mounted horizontally or vertically using the two mounting wings.

#### POWERING THE VHR-1

- **PoC - Power over Cable:** When installed along with a VHD-4/8 HDBT Matrix Switch or VHT-1 HDBT Transmitter, power will be supplied to the VHR-1 over the HDBaseT Cat5e/6 cable also used for HDMI video.

OR

- **AC Adapter:** Connect an AC adapter (24VDC/1.25A) (sold separately) to the VHR-1 power jack.

#### HDBASET CABLE REQUIREMENTS:

The VHR-1 receives HDMI video, IR/RS232 control signals and power over a Cat5e/6 cable wired to a VHD-4/VHD-8 matrix switch or VHT-1 HDBaseT Transmitter.

- Extends HDMI 1080p video up to 230ft (70m).
- Extends HDMI 4Kx2K video up to 115ft (35m).

#### HDMI VIDEO

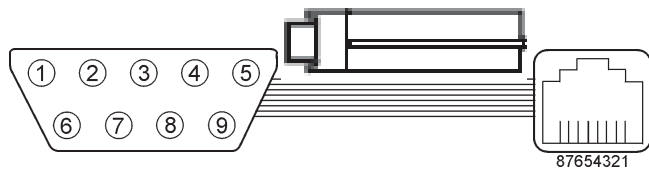
Connect an HDMI cable to the HDMI OUT and wire to video display (ex. TV or projector)

#### CONTROL OUTPUTS

The VHR-1 is an expansion device for an RTI control system and is capable of transmitting IR and bi-directional RS232 to controlled devices via the VHD-4/8 matrix switch and XP processor.

- **Serial:** RS232 signal is delivered over Cat5e/6 cable up to 50ft (15m) depending on baud rate (supported baud rates: 2400bps - 195200bps). First remove the protective sticker covering RJ45 jack and wire a Cat5e/6 cable to device. An RJ45>DB9 serial adapter (not included) may be required for connection to some types of equipment. (See RJ45>DB9 serial adapter pinout diagram below).
- **Infrared Output:** IR signals can be transmitted via the VHR-1 to devices via the IR OUT port using an infrared emitter (100mA maximum, non-adjustable). See VHD-4/8 matrix switch manual for instructions on IR control and cabling options.

#### RJ-45 > DB9 SERIAL ADAPTER PINOUT



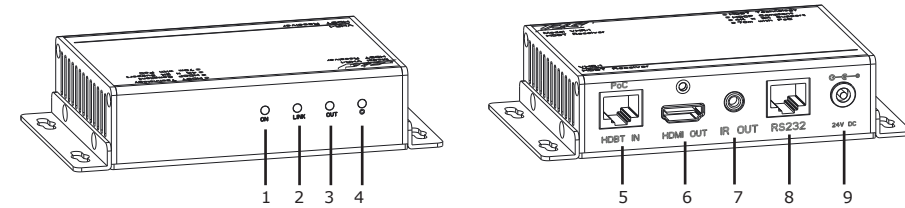
##### DB-9 Connector Pin Out

Pin	Signal Name	Signal Description
1	DCD	Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground/Common
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected

##### RJ-45 Connector Pin Out

Pin	Signal Name	Signal Description
1	DSR	Data Set Ready
2	DCD	Carrier Detect
3	DTR	Data Terminal Ready
4	GND	Signal Ground/Common
5	RXD	Receive Data
6	TXD	Transmit Data
7	CTS	Clear To Send
8	RTS	Request To Send

### VHR-1 REFERENCE



#### DESCRIPTIONS

- 1) ON: Status indicator - Blinks green when the device is functioning normally.
- 2) LINK: HDBaseT link status indicator - Illuminates green when the connection is successful.
- 3) OUT: HDCP compliance indicator - Illuminates green when the connected device supports HDCP and is working normally; blinks green when the connected device does not support HDCP.
- 4) POWER LED: Illuminates red when powered on.
- 5) HDBT IN: Connect to the HDBT OUT port of a VHD-4/8 or VHT-1 with a CAT5e/6 cable.
- 6) HDMI OUT: Connect to HDMI display device.
- 7) IR OUT: Connect an IR emitter for control of a device.
- 8) RS232: RJ45 port provides bi-directional RS232 control (see RJ45>DB9 serial adapter pinout diagram).
- 10) 24VDC: Connect with a 24VDC/1.25A power supply. NOTE: This is not necessary if used with VHD4/8 HDBT matrix switch or VHT-1 HDBT Transmitter as power will be delivered via PoC.

### VHR-1 CONNECTION DIAGRAM

