

CrystalView HDT

Modular CATx Extender • HDMI/VGA/USB-HID/IR

Installation and Operation Manual



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LIMITED WARRANTY

Rose Electronics warrants the CrystalView HDT to be in good working order for one year from the date of purchase from Rose Electronics or an authorized dealer. Should this product fail to be in good working order at any time during this one-year warranty period, Rose Electronics will, at its option, repair or replace the Unit as set forth below. Repair parts and replacement units will be either reconditioned or new. All replaced parts become the property of Rose Electronics. This limited warranty does not include service to repair damage to the Unit resulting from accident, disaster, abuse, or unauthorized modification of the Unit, including static discharge and power surges.

Limited Warranty service may be obtained by delivering this unit during the one-year warranty period to Rose Electronics or an authorized repair center providing a proof of purchase date. If this Unit is delivered by mail, you agree to insure the Unit or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or its equivalent. You must call for a return authorization number first. Under no circumstances will a unit be accepted without a return authorization number. Contact an authorized repair center or Rose Electronics for further information.

ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

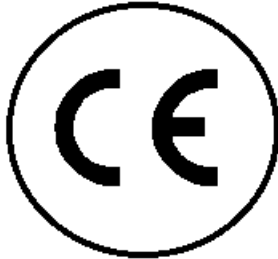
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DECLARATIONS OF CONFORMITY

This is to certify that, when installed and used according to the instructions in this manual, together with the specified cables and the maximum CPU cable length < 3m, the Units listed in Appendix B are shielded against the generation of radio interferences in accordance with the application of Council Directive 2004/108/EC as well as these standards:

- EN 55022: 2010 Class A for Transmitters and EN 55022: 2010 Class B for Receivers
- EN 61000-3-2: 2006+A2: 2009
- EN 61000-3-3: 2008
- EN 55024: 2010



The CrystalView HDT Transmitter has been found to comply with the limits for a Class A digital device, and the Receiver to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

The equipment complies with Australia's and New Zealand's standards for radio interference, and bears the C-Tick mark accordingly.

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INTRODUCTION

Disclaimer

While every precaution has been taken in the preparation of this manual, the manufacturer assumes no responsibility for errors or omissions. Neither does the manufacturer assume any liability for damages resulting from the use of the information contained herein. The manufacturer reserves the right to change the specifications, functions, circuitry of the product, and manual content at any time without notice.

The manufacturer cannot accept liability for damages due to misuse of the product or other circumstances outside the manufacturer's control. The manufacturer will not be responsible for any loss, damage, or injury arising directly or indirectly from the use of this product. (See limited warranty)

System Introduction

Thank you for choosing Rose Electronics CrystalView HDT. The CrystalView HDT is a standalone device (rack mountable) which extends HDMI/VGA video signals from connected devices up to 328 ft. (100 m) at resolutions up to 1080p without compression. The Receiver consoles can use USB keyboard and mouse or Infrared Remotes to control the source devices. CrystalView HDT also supports most USB HID touchscreens.

Incorporating the latest HDMI[®] technology, the CrystalView HDT transmitter chassis can house from 1 to 6 modular HDMI or VGA input cards. HDMI cards support both 8-bit and 10-bit deep color. VGA cards convert analog VGA signals and analog stereo audio to HDMI for local monitoring and transmission to Receivers. CrystalView HDT supports VESA DDC, display Hot-Plug Detect, and HDCP 1.3

In addition to the internal AC power supply, a redundant 48V DC power supply is available for the transmitter chassis. The Chassis transmitter cards use PoE (Power over Ethernet) technology to supply power to remote Receivers through the CATx cables. No power adapters are required at the remote locations.

CrystalView HDT Receivers provide a stereo audio output for monitoring (audio in PCM output). Dolby[®] TrueHD and DTS-HD Master Audio are passed through to HDMI outputs.

Wake-on-LAN software can be used to turn on or wake up computers connected to CrystalView HDT.

QV Link Software Utility can be used with a laptop computer to provide keyboard and mouse control at the remote Receiver, instead of a standalone USB keyboard and mouse.

Features

- Supports HDMI, VGA video input up to 1080p resolution
- Supports DVI video input with a DVI to HDMI converter
- HDMI Output resolutions to 1080p
- Converts VGA and analog audio input to HDMI for local or remote monitoring
- Receivers are powered via the CATx cable (Power over Ethernet)
- USB keyboard/mouse and HID touchscreen support
- Dolby® TrueHD and DTS-HD Master Audio passed through to HDMI outputs
- 1U chassis can house up to 6 HDMI or VGA transmitter cards
- Monitor hot plug detection and DDC support
- Infrared remote controller support (30 to 56 kHz)
- AC internal power supply with optional DC redundant power supply
- HDCP 1.3 compliant
- Connected computers can be started by Wake On LAN network software

Compatibility

Hardware	
Operating Systems	All operating systems
Video	HDMI or VGA video input, HDMI video output
Keyboard	USB keyboards
Mouse	USB mice
Touchscreen	USB HID touchscreens
Audio	Compatible with devices which output either analog or digital audio

Table 1. Compatible Hardware

Package contents

The package contents consist of the following:

- CrystalView HDT transmitter chassis with HDMI or VGA transmitter cards installed as ordered
- CrystalView HDT receiver(s)
- Power Supply Cord
- Manual

Additional cables can be ordered separately. If the package contents are not correct, contact Rose Electronics or your reseller so the problem can be quickly resolved.

MODELS

CrystalView HDT Models

The CrystalView HDT Transmitter chassis comes in a single model which can house from 1 to 6 HDMI or VGA transmitter cards. The following figures show the indicators and connectors on a fully equipped chassis.

Transmitter Chassis Front and Rear Panels



Figure 1. CrystalView HDT Transmitter Front and Rear Panels

Indicators and Connectors

1. Release Knobs: Turn the knobs counter-clockwise to loosen and clockwise to secure the front panel to the chassis.
2. Indicators:
 - PWR: Glows green when a card is installed in the indicated slot and power is applied.
 - STAT: Glows green when a card in the indicated slot is connected to a computer.
 - LINK: Glows green when a card in the indicated slot is connected to a remote Receiver.
 - HDCP: Glows green when the video signal includes HDCP encryption. Blinks green when the video signal is not encrypted
3. Release Screw: Turn the screw counter-clockwise to loosen and clockwise to secure the front panel to the chassis.
4. HDMI local: Connects to a local HDMI display.
5. VGA input: Connects to VGA and analog audio source using a proprietary cable.
6. HDBaseT RJ-45: Connects to a remote CrystalView HDT Receiver via CAT5e/6 cable.
7. USB- B: Connects to a computer source via USB- A/B cable.
8. Dip Switches: For firmware upgrades.
9. HDMI local: Connects to an HDMI display.
10. HDMI input: Accepts HDMI video/audio input.
11. External IR: Connects to IR Blaster used to transmit IR Controller signals to video device.
12. Ethernet RJ-45: Connects to a computer running Wake-On-LAN software.
13. Dip Switches: For resetting the Wake-On-LAN IP address to the default (192.168.1.31).
14. DC Power: Connects to optional 48 V DC power supply.
15. AC Power: Connects to the AC power cord.

Receiver Front and Rear Panels



Figure 2. CrystalView HDT Receiver Front and Rear Panels

Indicators and Connectors

1. Indicators:
 - PWR: Glows green when the receiver is powered on.
 - STAT: Glows green when the Receiver detects the transmitter card is connected to a computer.
 - LINK: Glows green when the Receiver is connected to a powered transmitter card.
 - HDCP: Glows green when the video signal includes HDCP encryption. Blinks green when the video signal is not encrypted
2. IR Receiver: Receives infrared signal from an IR- device for wireless remote control.
3. USB-B: Connects to a laptop computer for keyboard and mouse control using QV Link software.
4. USB-A: Connects to a USB keyboard and mouse.
5. Dip Switches: Used to perform firmware upgrades.
6. HDBaseT RJ-45: Connects to a CrystalView HDT Transmitter card via CAT5e/6 cable.
7. HDMI Output: Connects to an HDMI monitor for digital video and audio.
8. Audio Output: Connects to headphones.

INSTALLATION AND OPERATION

Installation

The installation of the CrystalView HDT is quick and simple. This section of the manual describes how to connect the CrystalView HDT to computers and video equipment. While the steps given here need not be followed in any particular order, it is recommended that power is applied to the unit as a final step.

Basic Setup When Connecting to a Computer

The following figure shows a typical setup of CrystalView HDT Transmitter and Receiver connected to a remote computer.

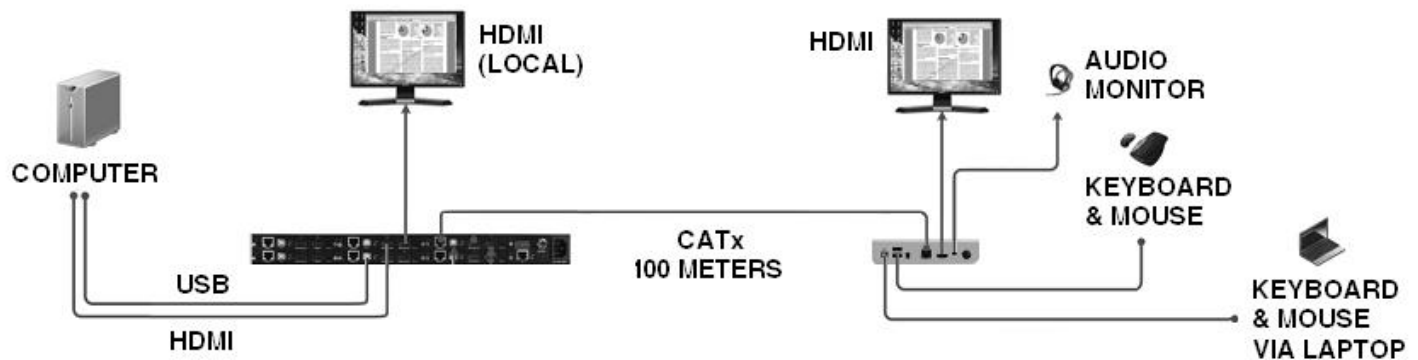


Figure 3. Basic Setup When Connecting to a Computer

Up to six computers can be connected to a fully populated CrystalView HDT Transmitter chassis. Please note that the transmitter cards are numbered from lower left to upper right. Make all connections prior to applying power to the Transmitter chassis.

- If the computer supports HDMI video, connect an HDMI cable between the computer's HDMI output and the HDMI input on an HDMI transmitter card.
- If the computer supports VGA video, connect the proprietary VGA with audio cable to the Computer's HD15 VGA connector and analog audio output jack. Plug the other end of the cable to the HD15 connector on a VGA transmitter card.
- Using a USB Type A to Type B cable, connect a computer's Type A USB port to the Type B USB port of the same transmitter card.
- If a video monitor is desired near the video source, connect an HDMI monitor to the Transmitter Card connector labeled HDMI Loop Out.
- Connect a Cat5e/6 Cable between the transmitter card's RJ-45 connector (labeled HDBaseT) and the RJ-45 connector on the remote Receiver.
- Connect an HDMI monitor and a keyboard and mouse to the remote receiver. Though digital audio will be routed to the HDMI display, there is also an audio monitor jack on the receiver suitable for headphones.
- If desired, keyboard and mouse control can be supplied by a laptop computer running the QV Link program. Using a USB Type A to Type B cable, connect the laptop computer's Type A USB port to the Type B USB port of the remote Receiver
- Apply power to the monitors, the transmitter chassis, and the computer.

Basic Setup When Connecting to a Video Player

The following figure shows a typical setup of CrystalView HDT Transmitter and Receiver connected to a remote video player.

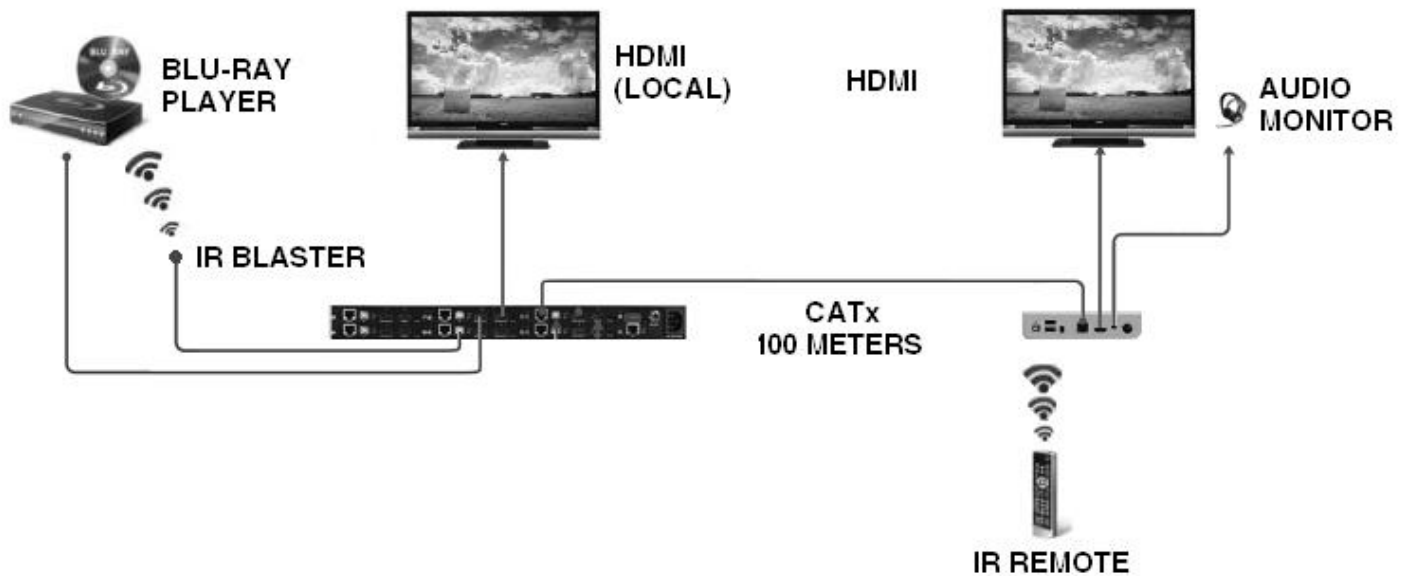


Figure 4. Basic Setup When Connecting to a Video Player'

- Connect an HDMI cable between the video player's HDMI output and the HDMI input on the transmitter card.
- Connect an IR Transmitter to the External IR connector on the same transmitter card.
- If a video monitor is desired near the video source, connect an HDMI monitor to the Transmitter Card connector labeled HDMI Loop Out.
- Connect a Cat5e/6 Cable between the transmitter card's RJ-45 connector (labeled HDBaseT) and the RJ-45 connector on the remote Receiver.
- Connect an HDMI monitor to the remote receiver. Though digital audio will be routed to the HDMI display, there is also an audio monitor jack on the receiver suitable for headphones.
- To use the Video Player's IR Remote Controller, make sure it faces the IR input on the front of the remote Receiver.

Operation

Operating the CrystalView HDT is simple and intuitive. The sections below describe keyboard commands for certain basic operations.

Video Image adjustment with VGA input sources

When working with a VGA source, there may be times for a given resolution when the image is not ideally aligned on the display screen. Use the following hot-keys, and continue adjusting until the image satisfactorily fits the screen.

Hotkey	Function
Ctrl + Shift + Alt + F10	Enter VGA adjustment mode. Keyboard LEDs will blink continuously.
F10	Exit VGA adjustment mode. Keyboard LEDs will return to previous state.
↑	Increase the vertical start position. Image will move up on the display.
Ctrl + ↑	Increase the vertical start position by increments of 10.
↓	Decrease the vertical start position.
Ctrl + ↓	Decrease the vertical start position by increments of 10.
→	Increase the horizontal start position. Image will move to the left.
Ctrl + →	Increase the horizontal start position by increments of 10.
←	Decrease the horizontal start position.
Ctrl + ←	Decrease the horizontal start position by increments of 10.
U	Increase vertical total size of the image.
Ctrl + U	Increase the vertical total size of the image by increments of 10.
N	Decrease the vertical total size of the image.
Ctrl + N	Decrease the vertical total size of the image by increments of 10.
J	Increase the horizontal total width of the image.
Ctrl + J	Increase the horizontal total width of the image by increments of 10.
H	Decrease the horizontal total width of the image.
Ctrl + H	Decrease the horizontal total width of the image by increments of 10.
Ctrl + S	Save the video adjustments in non-volatile memory.
Ctrl + D	Return the current image adjustment parameter to the factory default setting.
Ctrl + A	Return all image adjustment parameters to the factory default setting.
Ctrl + C	Scrolls through the set of available image parameters that can be adapted. And then perform minor image adjustment using the above hotkeys.

Table 2. Video Image Adjustment Hotkeys

Volume Control When Using Headphones

The volume level of headphones connected to a CrystalView Receiver can be adjusted using combination keystroke commands with a USB keyboard. There are 10 volume levels.

Hotkey	Function
Ctrl + Shift + Alt + ↑	Increases the volume one level.
Ctrl + Shift + Alt + ↓	Decreases the volume one level.
Ctrl + Shift + Alt + 0 to 9	Sets a volume level, where 0 is no volume and 9 is loudest volume.
Ctrl + Shift + Alt + m	Toggle between current volume level and muted volume.

Table 3. Volume Control Hotkeys

PRODUCT SAFETY

Safety

The CrystalView HDT, like all electronic equipment, should be used with care. To protect yourself from possible injury and to minimize the risk of damage to the Unit, read and follow these safety instructions.

- Follow all instructions and warnings marked on this Unit.
- Except where explained in this manual, do not attempt to service this Unit yourself.
- Do not use this Unit near water.
- Assure that the placement of this Unit is on a stable surface.
- Provide proper ventilation and air circulation.
- Keep connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power adapter and connection cables designed for this Unit.
- Keep objects that might damage this Unit and liquids that may spill, clear from this Unit. Liquids and foreign objects might come in contact with voltage points that could create a risk of fire or electrical shock.
- Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from the power source before cleaning.

Remove power from the Unit and refer servicing to a qualified service center if any of the following conditions occur:

- The connection cables are damaged or frayed.
- The Unit has been exposed to any liquids.
- The Unit does not operate normally when all operating instructions have been followed.
- The Unit has been dropped or the case has been damaged.
- The Unit exhibits a distinct change in performance, indicating a need for service.

SERVICE AND MAINTENANCE

Maintenance and Repair

This Unit does not contain any internal user-serviceable parts. In the event a Unit needs repair or maintenance, you must first obtain a Return Authorization (RA) number from Rose Electronics or an authorized repair center. This Return Authorization number must appear on the outside of the shipping container.

See Limited Warranty for more information.

When returning a Unit, it should be double-packed in the original container or equivalent, insured and shipped to:

Rose Electronics

Attn: RA _____

10707 Stancliff Road

Houston, Texas 77099 USA

Technical Support

If you are experiencing problems, or need assistance in setting up or operating your CrystalView HDT, consult the appropriate sections of this manual. If, however, you require additional information or assistance, please contact the Rose Electronics Technical Support Department at:

Phone: (281) 933-7673

E-Mail: TechSupport@rose.com

Web: www.rose.com

Technical Support hours are from: 8:00 am to 6:00 pm CST (USA), Monday through Friday.

Please report any malfunctions in the operation of this Unit or any discrepancies in this manual to the Rose Electronics Technical Support Department.

APPENDICES

Appendix A – Specifications

Physical Specifications	
Dimensions (L x W x H)	
Transmitter	17.3 in x 9.7 in x 1.8 in / 439 mm x 245 mm x 45mm
Receiver	4.1 in x 5.7 in x 1.2 in / 103 mm x 145 mm x 31 mm
Weight	
Transmitter	6.5 lbs / 2.9 kg
Receiver	0.6 lbs / 0.27kg
Video	
Supported Resolutions	
Transmitter VGA Card	Up to 1920 x 1200 @ 60 Hz
Transmitter HDMI Card and Receiver	480i, 480p, 576i, 720p, 1080i, 1080p (50 / 60 Hz)
Color Depth	
Transmitter VGA Card	8-bit
Transmitter HDMI Card and Receiver	8-bit, 10-bit
HDCP Compliant	
Transmitter VGA Card	Not Applicable
Transmitter HDMI Card and Receiver	Yes
DVI Support	
Transmitter VGA Card	Not Applicable
Transmitter HDMI Card and Receiver	Yes, through a DVI to HDMI adapter
HDMI Loop Out (Transmitter Only)	VGA Card: Yes (Converted VGA with embedded audio)
	HDMI Card: Yes
Video Bandwidth	Single-Link 225 MHz
Transmission over UTP	1080p (328 ft / 100 m)
IR	
Transmitter	IR Blaster or through an IR Blaster cable
Receiver	IR Receiver
Supported IR Carrier Frequency	30 ~ 56 KHz
Audio	
Audio Support (Pass-through)	
Transmitter VGA Card	Yes
Transmitter HDMI Card and Receiver	Surround Sound (7.1 ch), Dolby® TrueHD and DTS-HD
Power	
Power Supply	
Transmitter	100 ~ 240 V / 48 V DC Adapter
Receiver	No external power supply required; 10 W (5 V) over Ethernet
Power Consumption	
Transmitter	Max 120 Watt
Receiver	Max 10 Watt

Environmental	
Operating Temperature	32 °F to 104 °F (0 °C to 40 °C)
Storage Temperature	14 °F to 122 °F (-10 °C to 50 °C)
Relative Humidity	0% to 80%, Non-Condensing
Approvals	
Transmitter	FCC Class A, CE, C-Tick
Receiver	FCC Class B, CE, C-Tick

Appendix B – Part Numbers

Part Number	Description
CRV-HDB-DH06-P	CrystalView HDT Six Bay Chassis
CRV-HDB-DLHDTXT-P/IRK	HDMI Transmitter Card
CRV-HDB-DLVGTXU-P/IRK	VGA Transmitter Card
CRV-HDB-SRVGTXU-P	CrystalView HDT Receiver
SWP-HDB-PA48/160	Optional Power Adapter, 48V 160W

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