CrystalView HDT

CATx Video, Audio and USB Extender

ROSE.COM

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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Rose Electronics Part # MAN-CV-HDT
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TABLE OF CONTENTS

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)

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 to1080p 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.

About This Manual

This manual covers the installation and operation of the CrystalView HDT. The Installation section describes how the CrystalView HDT components are connected to computers or video equipment and to the user console peripherals. The Operations section describes some adjustments that can be made to audio and video at the user console.

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

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.

Product registration

Register your product for future updates at: www.rose.com/htm/online-registrationform.htm

MODELS

Model Description

The CrystalView HDT Transmitter chassis comes in a single model that can support 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

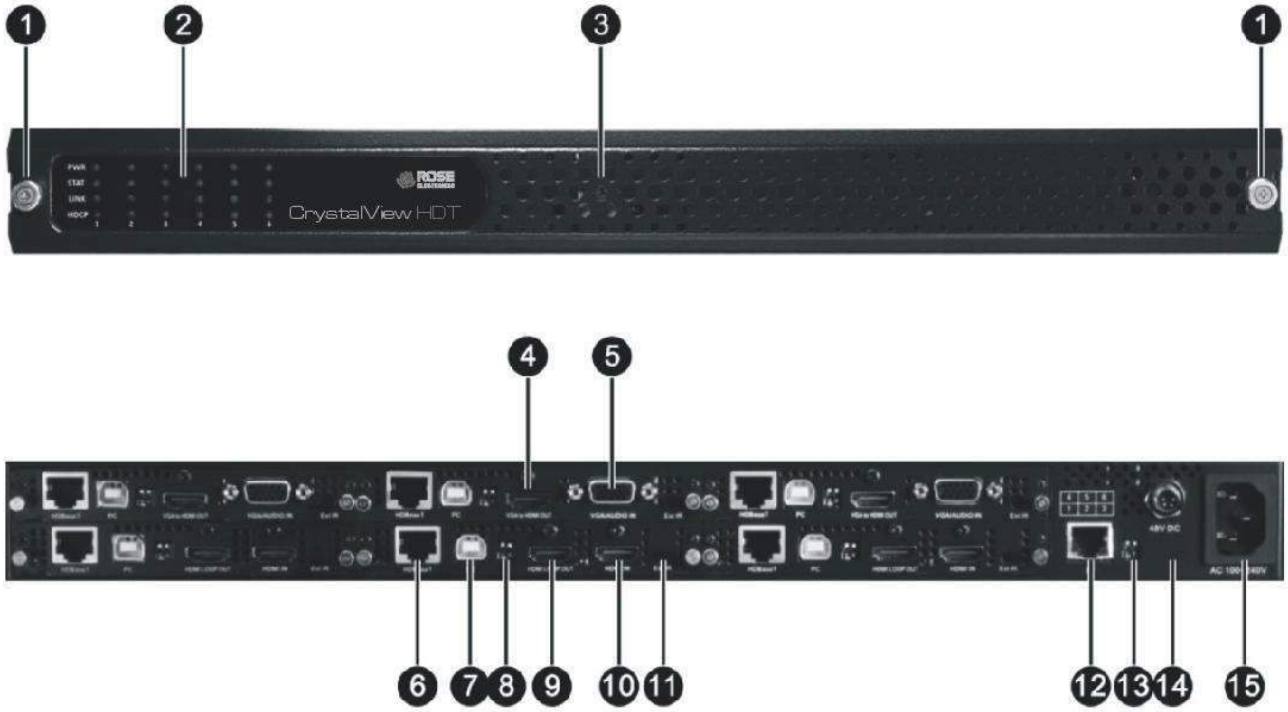


Figure 1. CrystalView HDT Transmitter Front and Rear Panels

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

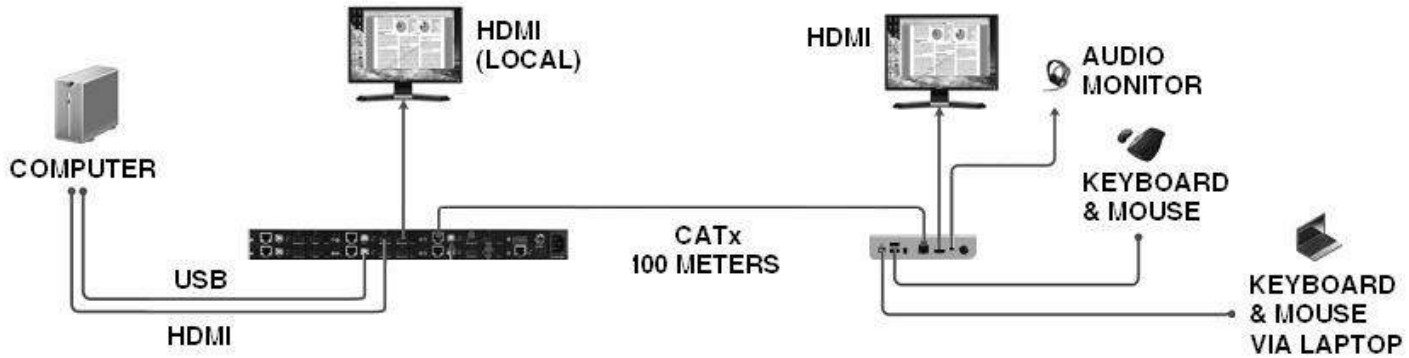
1. Indicators: PWR Glows green when the receiver is powered on.
   STAT Glows green when the Receiver detects the transmitter card is connected to a computer.
   LINK Glows green when the Receiver is connected to a powered transmitter card.
   HDCP Glows green when the video signal includes HDCP encryption. 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

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.



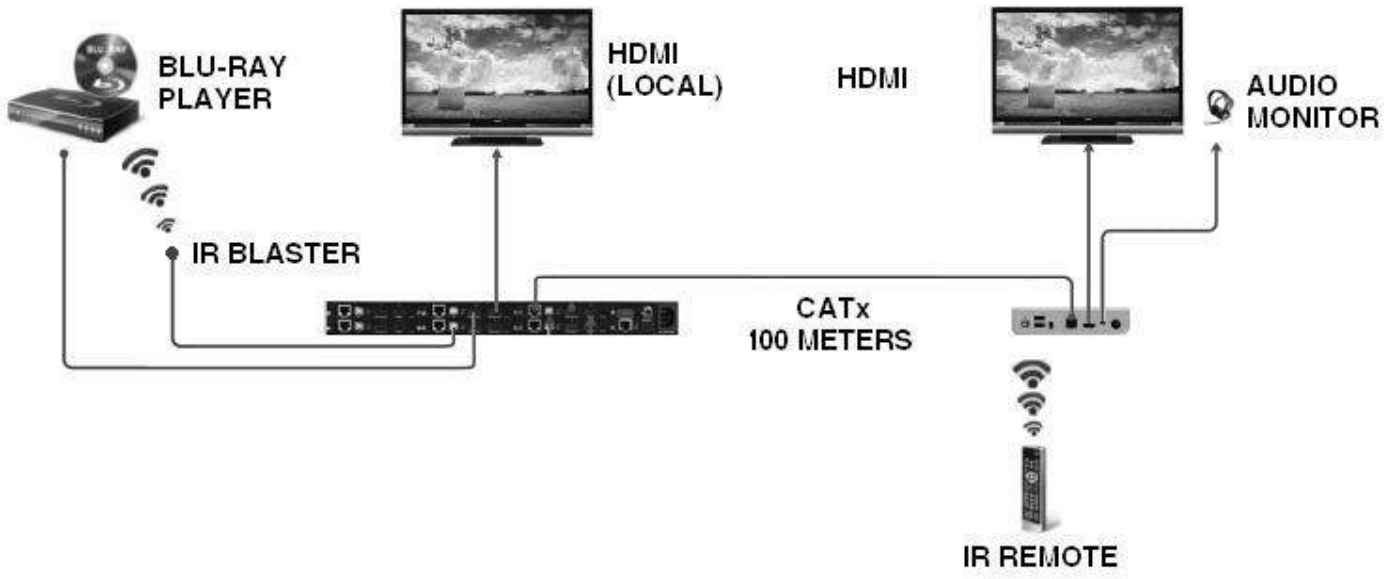
Connecting the computers

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.



- 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.

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.

- 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.

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.

- 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 — Scroll through the image adjustment parameters and perform minor adjustments with the above keys.

APPENDICES

Appendix A – General Specifications

Inputs

HDMI IN (HDMI connector)	Automatic sensing 8/10-bit HDMI mode: 480i50, 480i60, 480p50, 480p60, 576i50, 576i60, 720p50, 720p60, 1080i50, 1080i60, 1080p50, 1080p60 DVI-D mode: 480p60, 576i60, 720p60, 1080i60, 1080p60 Support for most resolutions listed for DVI 1.0.
VGA/AUDIO IN (VGA connector)	Automatic sensing 720x400 @ 70Hz (IBM, VGA) 640x480 @ 60Hz (IBM, VGA) 640x480 @ 72/75Hz (VESA) 800x600 @ 56/60/75Hz (VESA) 832x624 @ 75Hz (Apple, Mac II) 1024x768 @ 60/70/75Hz (VESA) 1280x1024 @ 75Hz (VESA) 1152x864 @ 75Hz (4:3 aspect ratio) 1280x1024 @ 60/70Hz (5:4 aspect ratio) 1440x900 @ 60/75Hz (16:10 aspect ratio) 1680x1050 @ 60Hz (16:10 aspect ratio) 1920x1080 @ 60Hz (16:9 aspect ratio)
IR (Infrared receiver)	Infrared signal input from an infrared-compliant remote control.
HDBaseT (RJ45 connector)	For direct pairing between CrystalView HDT HDMI or VGA transmitter cards CrystalView HDT receivers; can be extended up to 100m (328ft).

Outputs

HDMI OUT (HDMI type A) **DVI (via adapter)** **LOOP OUT (HDMI type A)**	Automatic sensing: Up to 1080p60 (based on connected display's native resolution) LOOP OUT and HDMI OUT resolution will be synchronized to the lowest native resolution display.

VGA to HDMI OUT (HDMI type A)	Automatic sensing 720x400 @ 70Hz (IBM, VGA) 640x480 @ 60Hz (IBM, VGA) 640x480 @ 72/75Hz (VESA) 800x600 @ 56/60/75Hz (VESA) 832x624 @ 75Hz (Apple, Mac II) 1024x768 @ 60/70/75Hz (VESA) 1280x1024 @ 75Hz (VESA) 1152x864 @ 75Hz (4:3 aspect ratio) 1280x1024 @ 60/70Hz (5:4 aspect ratio) 1440x900 @ 60/75Hz (16:10 aspect ratio) 1680x1050 @ 60Hz (16:10 aspect ratio) 1920x1080 @ 60Hz (16:9 aspect ratio) *Note:* *1. When the image is not aligned in the window, refer to the Operations section for using the hot-keys to perform image adjustment.* *2. Audio out is available when connecting to a HDMI monitor.*
Audio (Headphone jack)	Analog audio for monitoring output: (audio out port, on Receivers) Stereo
IR (Infrared blaster)	For transmitting infrared signal to infrared-compliant video source.
Ext IR **(2.5 mm mini jack)**	Connects to Infrared Blaster extension cable.

Others

Extension distance	100m (1080p60), HDMI over CAT.5e/6 cable (shielded) transmission
Video bandwidth	Single link 225MHz
Color depth	8-bit, 10-bit
Audio support (pass through)	Surround sound (7.1 ch), Dolby® TrueHD and DTS-HD
Supported IR carrier frequency	30 to 56kHz
Power	Power consumption CrystalView HDT Transmitter Chassis: 120W (maximum) CrystalView HDT Receiver: 10W (maximum) Power Supply (CrystalView HDT Transmitter Chassis) 100 ~ 240 V AC / 48 V DC adapter Power Supply (*CrystalView HDT Receiver*) Input: powered by Ethernet, no external power supply required Output: 5V

Dimensions/Weight	Dimensions CrystalView HDT Transmitter Chassis: 17.28×9.63×1.75 in (439.0×244.6×44.4mm) CrystalView HDT Receiver: 4.06×5.71×1.22 in (103×145×31mm) Weight CrystalView HDT Transmitter Chassis: 6.46 lb. (2.93 kg) CrystalView HDT Receiver: 0.597 lb. (270 g)
Environment / Safety	Temperature: Operating: 32°F to 104°F (0°C to 40°C) Storage: 14°F to 122°F (-10°C to 50°C) Humidity, 0 % to 80 % relative, non-condensing Safety, FCC/CE/C-Tick/Class A (Transmitter) Class B (Receiver)

Appendix B – Resetting to the Factory Default State

1. Remove power from the CrystalView HDT Transmitter Chassis.
2. Push the number 2 dip switch located on the rear panel downward to the **ON** position.
3. Apply power to the CrystalView HDT Transmitter Chassis.
4. Push the number 2 dip switch upward to the **OFF** position.

Appendix C – Part Numbers

CRV-CH06-HDT-P	CrystalView HDT, 6 Bay Chassis for up to 6x HDBaseT TX Cards
CRV-DLHTXU-P/IRK	CrystalView HDT, HDBaseT Transmitter Card, HDMI-DVI, USB HID, IR, CATx, 328ft (100m)
CRV-DLVTXU-P/IRK	CrystalView HDT, HDBaseT Transmitter Card, VGA, USB HID, Audio, IR, CATx, 328ft (100m)
CRV-SRHTXU-P	CrystalView HDT, HDBaseT Receiver Unit, HDMI, USB HID, Audio, IR, CATx, POE
CRV-SRHTXU	CrystalView HDT, HDBaseT Receiver Unit, HDMI, USB HID, Audio, IR, CATx
CRK-2HDTXU-P	CrystalView HDT, HDBaseT Extender Kit, HDMI-DVI, USB HID, IR, CATx, 328ft (100m)
TFR-48D330FSUD4	CrystalView HDT, 48V 160W (3.3A) POE Power Adapter

SERVICE AND TECHNICAL SUPPORT

Service Information

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 Vista USB, 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.

Safety and EMC Regulatory Statements

The Vista USB has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the Vista USB 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 or rack mounted.
Provide proper ventilation and air circulation.
Keep power cord and connection cables clear of obstructions that might cause damage to them.
Use only power cords, power adapter and connection cables designed for this Unit.
Use only a grounded (three-wire) electrical outlet.
Use only the power adapter provided with the 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.
Operate this Unit only when the cover is in place.
Do not use liquid or aerosol cleaners to clean this Unit. Always unplug this Unit from its electrical outlet before cleaning.
Unplug this Unit from the electrical outlet and refer servicing to a qualified service center if any of the following conditions occur:

- The power cord or 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.

Safety information

Documentation reference symbol. If the product is marked with this symbol, refer to the product documentation to get more information about the product.

WARNING A WARNING in the manual denotes a hazard that can cause injury or death.

CAUTION A CAUTION in the manual denotes a hazard that can damage equipment.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazardous conditions and have taken appropriate steps.

Grounding
There must be an un-interruptible safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied power cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

Servicing
There are no user-serviceable parts inside these products. Only service-trained personnel must perform any servicing, maintenance, or repair.

The user may adjust only items mentioned in this manual.

ROSE ELECTRONICS

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