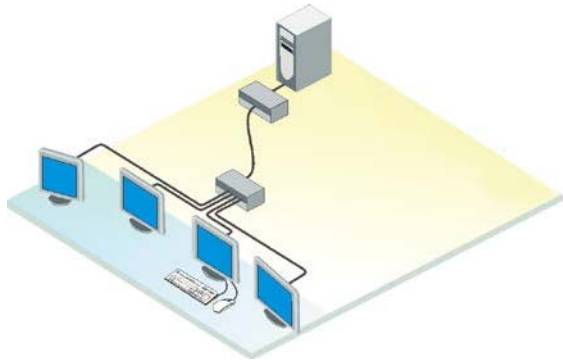


ROSE.COM

INSTALLATION AND OPERATIONS MANUAL



Limited Warranty

Rose Electronics warrants the CrystalView EX5 Quadro 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.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER AS WARRANTED ABOVE, YOUR SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. IN NO EVENT WILL ROSE ELECTRONICS BE LIABLE TO YOU FOR ANY DAMAGES INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR THE INABILITY TO USE SUCH PRODUCT, EVEN IF ROSE ELECTRONICS OR AN AUTHORIZED DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. SO THE ABOVE MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

NOTE: 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 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 his own expense.

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FCC Radio Frequency Interference

This device complies with FCC Part 15 Class A. 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.

CE Statement

This product meets European Standard EMC EN-55022 Class A, EN 61000, and EN 55024

IC Statement

This Class A digital apparatus complies with Canadian ICES-003.

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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, or circuitry of the product 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.

System Introduction

Thank you for choosing the CrystalView EX5 Quadro extender from Rose Electronics for your remote accessing needs. The CrystalView EX5 Quadro system consists of a Transmitter unit and a Receiver unit. The Transmitter unit connects to your computer's DVI-D and USB Type A connectors using the provided DVI and USB cables. The Receiver unit connects to your workstation. The Transmitter and Receiver units are connected together with industry standard CAT5e or better cable. This provides access to your computer from up to 330 feet (100m) away.

The CrystalView EX5 Quadro extender complies with USB 1.1 and USB 2.0 specifications and supports USB 1.1 and low bandwidth USB 2.0 devices. It is ideal for use in industrial control areas, digital signage, connecting cameras for security systems, USB device printing, scanning and storage.

If additional USB devices are needed, you can add up to 4 USB hubs to the Receiver and connect up to 13 USB devices.

The CrystalView EX5 Quadro supports all major operating systems including Windows[®], MAC[®], and Linux[®].

USB printers, scanners, web cameras, USB hard drives, flash drives, MP3 players and more can easily be connected to the Receiver unit.

Since there are a number of factors that effect the operation of the CrystalView EX5 Quadro, not all devices are compatible with this product.

Features

- Supports CAT5e cable distances up to 330 feet (100m)
- Supports uncompressed HD DVI video with resolutions up to 1920 x 1200 (Resolution does not degrade over CAT5e distance)
- USB Host support – EHCI (USB 2.0) and OHCI/UHCI (USB 1.1)
- Supports USB 2.0 (high-speed at reduced bandwidth), USB 2.0 and 1.1 (Full-speed), and USB 2.0 and 1.1 (Low-speed)
- Three USB ports available on the Receiver unit
- Standard USB hubs can be used to increase the maximum number of connected USB devices to 13 and 4 USB hubs.
- Up to 500 mA of power is available at each USB port on the Receiver for powering high-power USB devices
- Extends stereo audio up to 330 feet (100m)
- Plug-and-Play installation, no configuration or set-up needed
- Quick and easy installation

The Transmitter unit requires a +5VDC power adapter (included).
The Receiver unit requires a +5VDC power adapter (included).

* CAT5e or better cable, Solid core CAT6 STP cable is recommended

Package Contents

- Transmitter unit
- Receiver unit
- 5V, 3A power adapter (Transmitter)
- 5V, 3A power adapter (Receiver)
- Product Manual

Additional Installation Items

- Computer with DVI-D/DVI-I output
- USB 1.1 or 2.0 host computer
- 1 - CAT5e cable (Transmitter to Receiver – Point-To-Point)
- USB 1.1 or 2.0 compatible devices

Rose Electronics web site

Visit our web site at www.rose.com for additional information on the CrystalView EX5 Quadro and other products offered by Rose Electronics that are designed for data center applications, classroom environments, digital wall/signage displays, industrial / military systems, and many other access and switching applications.

Product Registration

Take advantage of the following when you register your Rose Electronics products online at www.rose.com/htm/online-registrationform.htm.

- Rose Electronics standard warranty *Plus*
- Free Lifetime Firmware Updates
- Free Lifetime Technical Support
- 30 day Money Back Guarantee
- Priority “First-In-Line” Status for Technical Support

System Overview

The CrystalView EX5 Quadro is a very versatile and flexible system that can be easily and quickly installed. You can position your computer anywhere within 330 feet of the Receiver unit and access and control it as if you were directly connected to the computer. You can control and use a USB keyboard, USB mouse, webcam, flash drive, USB speakers, microphone and other compatible USB devices.

The versatility of the CrystalView EX5 Quadro makes it ideal for security, medical, signage, and industrial applications where remote access is required.

The Receiver unit has 3 USB Type A connectors. These are usually connected to a USB mouse, USB keyboard, and a USB HUB. The CrystalView EX5 Quadro supports up to 13 USB devices and 4 HUB levels.

Models

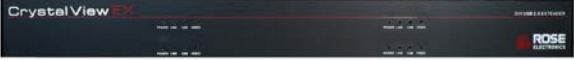

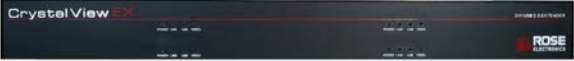
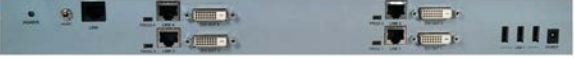
<p>Transmitter – Front View</p> 	<p>Indicators</p> <ul style="list-style-type: none"> Power Link USB Video
<p>Transmitter – Rear View</p> 	<p>Connectors</p> <ul style="list-style-type: none"> DVI-D In (4) Prog (4) USB Type B Link (5) Audio Power (+5V / 3A)
<p>Receiver – Front View</p> 	<p>Indicators</p> <ul style="list-style-type: none"> Power Link USB Video
<p>Receiver – Rear View</p> 	<p>Connectors</p> <ul style="list-style-type: none"> DVI-D Out (4) Prog (4) USB Type A (3) Link (5) Audio Power (+5V / 3A)

Figure 1. Models

Transmitter - Front Panel

Indicator	Description
Power (Green LED)	On = Ready / Off = No power
Link (Green LED)	On = Valid Link between Transmitter and Receiver Off = No Link
USB (Green LED)	On = Properly enumerated on host computer Off = No Link Blinking = host is in suspend mode
Video (Green LED)	On = Valid HDCP activity between the Transmitter and host computer Off = No Video activity Blinking = Normal video is being transmitted between the Transmitter and Receiver

Transmitter - Rear panel Connectors

Connector	Description
DVI-D In	DVI-D Video Input from Host computer
Prog	Reserved for company use only
USB Type B	USB input from Host computer
Link (RJ45)	Connection for a CAT5e or better cable to the Receiver unit
Audio	Audio input from Host computer
Power	+5V, 3A power adapter

Table 1. Transmitter Indicators / Connectors

Receiver - Front Panel

Indicator	Description
Power (Green LED)	On = Ready / Off = No Link
Link (Green LED)	On = Valid Link between Transmitter and Receiver Off = No Link
USB (Green LED)	On = Properly enumerated on host computer Off = No Link Blinking = host is in suspend mode
Video (Green LED)	On = Valid HDCP activity between the Transmitter and host computer Off = No Video activity Blinking = Normal video is being transmitted between the Transmitter and Receiver

Receiver - Rear Panel

Connector	Description
DVI-D Out	DVI-D Video connector to the monitor
Prog	Reserved for company use only
USB Type A	Connection (3) for remote USB devices
Link (RJ45)	Connection for a CAT5e or better cable to the Transmitter unit
Audio	Audio output to console speaker input
Power	+5V, 3A power adapter

Table 2. Receiver Indicators / Connectors

System Installation

Before installing the CrystalView EX5 Quadro, pre-plan the layout of the computer, the Transmitter, the Receiver, and the equipment that will be connected to the Receiver. The Transmitter and Receiver units should be in a location that is easily accessible. The CAT5e cable should be routed away from equipment or environments that can cause interference with the data transmission between the Transmitter and Receiver.

The CrystalView EX5 Quadro is installed in a “Point-To-Point” configuration. This is easily done by connecting CAT5e* cables (330 ft / 100m) directly from the Transmitter’s RJ45 ports to the Receiver’s RJ45 ports.

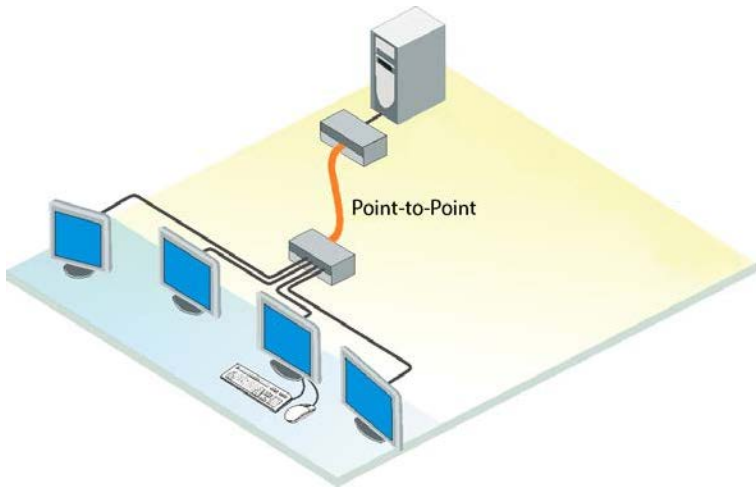


Figure 2. Typical Installation

Transmitter installation

1. Locate the Transmitter unit near the computer.
2. Connect a USB Type A/B cable to the Transmitter unit’s USB Type B port and to an available USB (1.1 or 2.0) Type A port on the computer.
3. Connect DVI cables to the Transmitter unit’s DVI-D In connectors and to the DVI video ports on the computer.
4. Connect an audio cable to the Transmitter unit’s Audio port and to the audio output port on the computer.
5. Connect CAT5e* cables from the Transmitter’s RJ45 connectors to the Receiver’s RJ45 connectors.
6. Connect the supplied 5V, 3A power adapter to an AC outlet and to the Transmitter’s power port.

Receiver installation

1. Locate the Receiver unit near the monitors and USB devices.
2. Connect the DVI monitor cables to the DVI-D out connectors on the Receiver's rear panel.
3. Connect your USB devices to the 3 USB Type A ports on the rear panel of the Receiver. Normally these USB ports are connected to a USB keyboard, USB mouse, and a USB Hub.
4. Connect an audio cable to the Receiver unit's Audio port and to the audio input port on the console sound device.
5. Connect CAT5e* cables from the Transmitter's RJ45 connectors to the Receiver's RJ45 connectors.
6. Connect the supplied 5V, 3A power adapter to an AC outlet and to the Receiver's power port.

* CAT5 cable – It is recommended that only CAT5e or better, UTP cabling be used to connect the Transmitter and Receiver units together. The CAT5e cabling must have straight-through conductors with no crossovers and terminated with 8 conductor RJ45 connectors at each end. The maximum CAT5e cable length for a point-to-point configuration is 330 feet (100 meters).

Installation Verification

The Power, Link, Video, and USB LEDs on the Transmitter and Receiver units will provide information regarding the installation, cabling, video, and other items. Verify that the LEDs are registering properly (refer to Table 1 and Table 2).

If a Link LED is off, the CAT5e cable between the Transmitter and Receiver is not connected.

The Power LED should be solid green. If it is off, the system is not ready.

Connecting USB Devices

Up to 13 USB 1.1 or 2.0 devices can be connected to the Receiver unit using USB Hubs. Normally the three USB Type A connectors on the Receiver are connected to a USB Keyboard, USB mouse, and a USB Hub. Installing your USB devices is no different than installing them when connected directly to a computer's USB port.

1. Install the USB device according to the manufacturer's procedure and any required software to operate the USB device.
2. Connect the USB device to the Receiver's USB ports or a HUB port.
3. Verify that the operating system has recognized the USB device and, if needed, installed the proper drivers to operate the USB device.
4. Test the USB device.

Each USB Type A port on the Receiver unit can supply up to 500ma to a USB device or USB Hub. When connecting additional USB devices through a USB Hub, consider the total current needed to operate all of the USB devices. If the total power is greater than 500ma, use a powered Hub to supplement the power to the devices.

The CrystalView EX5 Quadro is compatible with a wide variety of graphic cards, monitors, USB devices, and operating systems.

System Operation

The operation of the CrystalView EX5 Quadro is no different than operating your computer with your keyboard, monitor, mouse, and USB devices directly connected to it. The only difference is the computer can be located anywhere within 330 feet from the Receiver unit. Applications can be executed, files opened, edited, and saved, upgrades can be performed and normal system operations can be performed as if you were directly connected to your computer.

System Troubleshooting

All LEDs on the Transmitter or Receiver are off

- Check the DC power adapter connection to the Unit
- Verify there is power at the power source

Link LED on the Transmitter and Receiver are off

- Check the CAT5e Link connections on the Transmitter and Receiver

Video and/or USB performance is not satisfactory

- High amount of network traffic, reduce the number of CrystalView EX5 Quadro units on the network or reduce the network traffic.

Graphic/video settings do not list the specific resolution

- Up to date video drivers are not installed
- Resolution is not supported (See Appendix B)

The CrystalView EX5 Quadro Transmitter and Receiver indicators will provide information about the operation, connectivity and data transmission. Observe these indicators and refer to Table 1 and Table 2 for a description of the indicator states.

Product Safety

The CrystalView EX5 Quadro extender has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the CrystalView EX5 Quadro 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 is rack mounted.
- Provide proper ventilation and air circulation.
- Keep power cords and connection cables clear of obstructions that might cause damage to them.
- Use only power cords, power adapters and connection cables designed for this Unit.
- Use only a grounded (three-wire) electrical outlet.
- Use only the power adapter provided with the CrystalView EX5 Quadro .
- 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.

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 the Limited Warranty page 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, configuring or operating your product, 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.

Appendix A – General Specifications

Part numbers

CrystalView EX5 Quadro	CRK-1DTXT-EX5
USB Cable	CAB-USBAB005
DVI Cable	CAB-DVIDMM005
+5V,3A power adapter	TRF-05D300FSUB
Rack Mount Kit	RM-CRV-EX/19

Distance	330 feet (100m) Point-to-point
Resolution	1920 x 1200
USB Device Support	USB 2.0 High-Speed (at reduced bandwidth) Full Speed (USB 2.0 & 1.1) Low Speed (USB 2.0 & 1.1)
USB Hub Support	Up to 4 USB hubs plus one CrystalView Extreme -5 in any single chain
USB Devices Supported	A maximum of 13 USB devices
Receiver USB port power	500 mA at each port (3)
Transmitter Data	
Video connectors	DVI-D (24 pin female)
USB connectors	1 x USB Type B
Audio connector	3.5 mm stereo jack
Link connectors	5 x RJ45F
Dimensions	16.7 in x 4.85 in x 1.75 in (42.4 mm x 12.3 mm x 4.4 mm)
Receiver Data	
Video connectors	DVI-D (24 pin female)
USB connectors	3 x USB Type A
Audio connector	3.5 mm stereo jack
Link connectors	5 x RJ45F
Dimensions	16.7 in x 4.85 in x 1.75 in (42.4 mm x 12.3 mm x 4.4 mm)
Operating Temp	32°F to 104°F (0°C to 40°C)
Storage Temp	-4°F to 158°F (-20°C to 70°C)
Operating Humidity	20% to 80% non-condensing
Storage Humidity	10% to 90% non-condensing
Regulatory Testing	FCC Part 15 Class A, CE, ICE20030 Class A



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