

AUTO EQUALIZATION AND AUTO SKEW MODELS

INSTALLATION AND OPERATIONS MANUAL



Rose Electronics® warrants the ViewLink™ CATx 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

permanently 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.

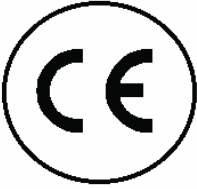
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IC STATEMENTS, EU DECLARATION OF CONFORMITY

EUROPEAN UNION DECLARATION OF CONFORMITY ACCORDING TO COUNCIL DIRECTIVE 89/336EEC & 73/23EEC



This equipment complies with the requirements of the European EMC Directive 89/336/EEC

Contents

Quick Start guide6
 Disclaimer1
 System introduction1
 Features.....2
 Package contents2
 Models3
 Installation.....4
 Installing the Switch model –.....4
 Installing the Video only model -4
 Operation5
 Keyboard Commands5
 Keyboard Commands - Country Codes.....6
 Keyboard Commands – Skew Adjustment (Skew models only)6
 Flash Utility features / procedure7
 TroubleShooting10
 Maintenance and Repair.....11
 Technical Support11
 Safety.....12

Figures

Figure 1. Quick Installation Diagram6
 Figure 2. Models3
 Figure 3. Monitor mounting bracket.....4
 Figure 4. Flash Scan Screen8
 Figure 5. Flash Port Configuration.....8
 Figure 6. Flash scan9

Appendices

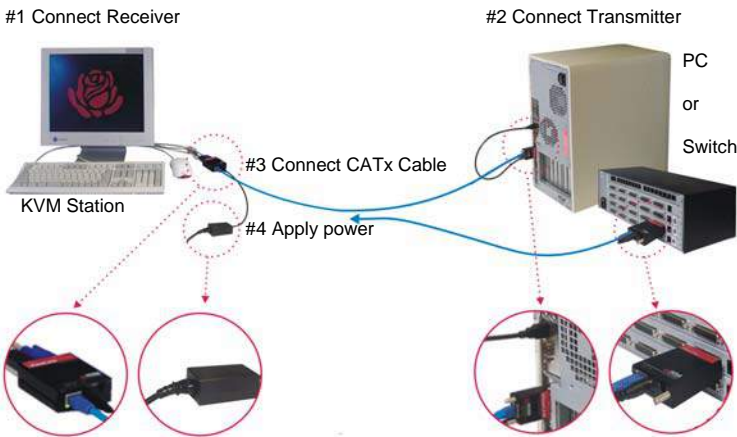
Appendix A – Part Numbers13
 Appendix B – Specifications14
 Appendix C – Grounding15
 Appendix D – Video Only Model.....16

Quick Start guide

The ViewLink system consists of a transmitter unit that connects to the video, keyboard, and mouse ports on a PC, server, or to a KVM switch and a receiver unit that connects to a keyboard, monitor, and mouse. The transmitter and receiver units are connected together with up to 1,000 feet of solid CATx cable. The transmitter and receiver are available for PS/2, USB, or PS?-USB systems. This section briefly describes the installation procedures. Refer to the following steps and diagram to install your ViewLink Catx.

- Step #1 –Connect the Receiver unit to the keyboard, monitor, and mouse cables on your KVM station. Connect the provided power adapter to the Receiver unit's power input jack.
- Step #2 –Connect the Transmitter unit to the keyboard, monitor, and mouse ports on your PC. Depending on your ViewLink CATx model, connect it to either the PS/2 (MiniDin6) or USB ports. If you are connecting to a KVM switch using the DB25 model, connect it to the KVM port on the switch.
- Step #3 –Connect the Receiver and Transmitter units together using up to 1,000 feet of CATx cable (CAT5, 5e, or 6).
- Step #4 –Apply power to the KVM monitor, the Receiver unit, and boot your PC (turn on the KVM switch if using the DB25 model).

When you initialize the extender, it automatically senses the cable distance between the transmitter and receiver unit, adjusts the compensation and sets up everything for you. Refer to the manual instructions for additional information.



(See Appendix C and D for grounding and video only models)

Figure 1. Quick Installation Diagram

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 Rose Electronics® ViewLink™ CATx enhanced KVM extender. The ViewLink CATx is the result of Rose Electronics commitment to providing state-of-the-art solutions for today's demanding workplace. The ViewLink CATx has proven to be a valuable investment for any business, big or small, that has a need to access computers, servers, or KVM switches from remote locations. Using the ViewLink CATx to remotely access your computer has several applications that make it convenient for the users. You can locate your computers in a secure area and access them from other unsecured areas. Computers used in hazardous industrial environments can be accessed remotely, keeping the users safe and unexposed to any hazards.

The ViewLink CATx system consists of two Units, a transmitter Unit and a receiver Unit. The transmitter connects easily to your computer or KVM switch. The receiver Unit connects to a remote keyboard, video monitor and a mouse. The transmitter and receiver units are connected together with industry standard CAT5, CAT5e, or CAT6 shielded or unshielded, solid core twisted-pair cable terminated with RJ45M connectors. All models can extend the distance from the CPU up to 1,000 feet. Applications can be executed; computer maintenance performed, and any function normally done can be performed with virtually no degradation in video quality and performance.

Installation only takes a few minutes since the ViewLink CATx automatically sets up various parameters and functions based on your system topology. There are no jumpers to set or adjustment knobs to turn. Parameters like video gain and color skew are automatically compensated for and properly adjusted based on the length and type of CATx cable used. Some fine tuning can easily be done using keyboard commands, but are rarely needed.

The only cable needed is a CATx cable to connect the transmitter to the receiver. CATx cable can be ordered from Rose Electronics in 25-1,000 foot lengths.

Features

- Available in automatic skew and non-skew models that connect to computers with PS/2 keyboard and mouse ports, computers with USB keyboard and mouse ports, or KVM switches with DB25F KVM ports
- Extend a KVM station from a CPU using a single CATx cable
- Resolution : Up to 1920 x 1440 @ 60Hz @ 300'
1024 x 768 @ 60Hz @ 1,000'
- ViewLink CATx uses a microprocessor to emulate the keyboard and mouse for plug and play operation. The keyboard and mouse on the receiver Unit do not have to be connected for the PC to boot; only the transmitter Unit must be connected to the PC
- Compatible with Rose Electronics family of KVM switches such as ServeView Pro, UltraView Pro and UltraMatrix
- Operating system independent
- Status indicator LEDs on each RJ45 connector
- All settings and video tuning are performed automatically. No user adjustments are needed to achieve a crystal clear display on the receiver KVM monitor. (Manual adjustments are available using special keyboard commands)

Package contents

The package contents consist of the following:

- The ViewLink CATx transmitter and receiver units as ordered
- Power adapter for receiver Unit
- Installation and operations manual
- PS/2 “Y” cable for receiver unit

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

Rose Electronics web site

Visit our web site at www.rose.com for additional information on the ViewLink CATx and other products that are designed for data center applications, classroom environments and other applications.

About this manual

This manual covers the installation and operation of the ViewLink CATx models.

Models

Transmitters

Receivers

PS/2



Video Only



USB & Video Only



Transmitter with 2-PS/2 cables and 1-USB cable is available

	<p>The PC model connects directly to the keyboard, monitor and mouse ports on a PC</p>		<p>The DB25 model connects directly to the KVM port of a KVM switch</p>
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Figure 2. Models

The only cable needed to install the basic configuration of the ViewLink CATx is the CATx cable that connects the transmitter to the receiver. Care should be used when routing the CATx cable. Avoid routing the cable close to machinery or electronic equipment. The electro-mechanical emissions may cause interference and undesirable video performance.

Installation

Installing the ViewLink CATx is a very easy plug-and-play process. For the PC, PS/2 and USB models simply connect the HD15M connector on the transmitter to the HD15F video out connector on the PC. Connect the PS/2 or USB keyboard and mouse cables to the corresponding connector ports on the PC. Connect the receiver directly to the keyboard, monitor, and mouse cables used for the KVM station. Connect the power adapter to the receiver unit's power port. Finally, connect the transmitter's RJ45 connector to the receiver's RJ45 connector using up to 1,000 feet of CATx cable.

If you are using a flat panel monitor, Rose Electronics has designed a universal mounting bracket that can be attached to any edge of a receiver unit and secured to the back of a flat panel monitor. An example of using this bracket is shown below. The bracket can be mounted vertically (as shown) or horizontally.



Figure 3. Monitor mounting bracket

NOTE: See Appendix C and D for proper grounding and video only installation

Installing the Switch model –

For the Switch DB25 model, connect the transmitter's DB25M connector to a KVM switch's DB25F KVM input connector. Connect the receiver directly to the keyboard, monitor, and mouse cables used for the KVM station. Connect the power adapter to the receiver unit's power port. Finally, connect the transmitter's RJ45 connector to the receiver's RJ45 connector using up to 1,000 feet of CATx cable.

NOTE: Distance will vary depending on resolution used

Installing the Video only model -

For the Video only model, connect the transmitter's HD15M connector to the HD15F video out connector on the PC. Connect the transmitter's USB cable to the computer's USB port. The USB cable provides power only to the transmitter. Connect the receiver's HD15F connector to a video monitor and connect the power adapter. If a USB port is not available, Rose Electronics can provide a special cable to connect to transmitter to a power adapter. See part number table.

NOTE: The USB ports on the receiver are for connecting a USB keyboard to perform video adjustments only. (Commands shown on page 5)

No user adjustments are needed. The ViewLink CATx will automatically determine the CATx cable length between the transmitter and receiver and automatically adjust the gain to compensate for the calculated cable length. If needed, keyboard commands can be issued to fine tune the video gain and equalization.

Apply power to the receiver unit, KVM monitor, and boot the PC. The monitor connected to the receiver unit will display a clear, clean image of the boot sequence.

Operation

Operation of your system is no different than having your keyboard, monitor, and mouse connected directly to a PC or KVM switch. The only difference is they can be up to 1,000 feet away. You can operate your system normally, programs can be executed, maintenance can be performed, and any operation normally performed can be done with no derogation in video quality and performance.

Keyboard Commands

Command	Description
Left Ctrl, Left Shift, e:	Perform a cable length measurement
Left Ctrl, Left Shift, keyboard +:	Increase the video gain by 1
Left Ctrl, Left Shift, keyboard -:	Decrease the video gain by 1.
Left Ctrl, Left Shift, keypad +:	increase the video equalization by 1
Left Ctrl, Left Shift, keypad -:	Decrease the video equalization by 1
Left Ctrl, Left Shift, k	Saves any changes made
Left Ctrl, Left Shift, i* (See * Below)	Sends Transmitter, CPLD, and receiver firmware version to a text editor on the CPU the unit is connected. Firmware is reported as follows: Transmitter = hxxxy, CPLD = yx, Receiver = dxxxy: Where x is a decimal digit, and y is an alphabetic character
Left Ctrl, Left Shift, g* (See * Below)	Send the most recent gain, equalization, cable length, autotdr status, red, green, and blue skew values to a text editor.

* **CAUTION: DO NOT EXECUTE THESE COMMANDS WITHOUT A TEXT EDITOR ACTIVE.** A text editor such as notepad must be started and selected prior to executing these keyboard commands.

Keyboard Commands - Country Codes

The following country code table allows you to enter the country code for type of keyboard and operating system used. This function is only required if your operating system is country specific and requires that a keyboard map specific for your operating system be entered. Sun Japanese keyboards and others that require this should enter their country code.

To enter the country code, enter the following key sequence:

Lctrl, Lshift, l, x, Enter, (non-cap L, x)

or

Lctrl, Lshift, l, x, y, Enter,

where X and Y are keyboard numeric keys.

If the country code number is a single digit (0-9), enter one digit (or two digits, ie.06), followed by enter. If the country code is a double digit (10-35), enter both numbers, followed by enter. Each key is pressed and released, and no more than 2 seconds can elapse between any two keys of the sequence, or the command will abort. The command only has to be entered once. ViewLink CAT5 KVM Extender saves the value in flash. The entered value does not change if the unit is flashed with new code.

Code	Country	Code	Country	Code	Country
00	Not Supported	13	International (ISO)	25	Spanish
01	Arabic	14	Italian	26	Swedish
02	Belgian	15	Japan (Katakana)	27	Swiss/French
03	Canadian-Bilingual	16	Korean	28	Swiss/German
04	Canadian-French	17	Latin American	29	Switzerland
05	Czech Republic	18	Netherlands/Dutch	30	Taiwan
06	Danish	19	Norwegian	31	Turkish-Q
07	Finnish	20	Persian (Farsi)	32	UK
08	French	21	Poland	33	US
09	German	22	Portuguese	34	Yugoslavia
10	Greek	23	Russia	35	Turkish-F
11	Hebrew	24	Slovakia	36-255	Reserved
12	Hungary				

Keyboard Commands – Skew Adjustment (Skew models only)

Command	Function
Left Ctrl + Left Shift + 1	Increase RED skew by one unit
Left Ctrl + Left Shift + 2	Decrease RED skew by one unit
Left Ctrl + Left Shift + 3	Increase Green skew by one unit
Left Ctrl + Left Shift + 4	Decrease Green skew by one unit
Left Ctrl + Left Shift + 5	Increase Blue skew by one unit
Left Ctrl + Left Shift + 6	Decrease Blue skew by one unit

When adjustments are complete, save the changes (Left ctrl + left shift + k)

Flash Utility features / procedure

The ViewLink Catx was designed to easily keep up with the ever changing electronic world. The flash feature of the ViewLink CATx means the product will always be up to date with new technologies, features, and enhancements.

Updating the flash memory is an easy process using Rose's flash utility. The universal flash utility is easily installed and can be used on a variety of Rose products. When executed, the flash program will automatically detect the product type to flash, validate the connections, and verify the product firmware version.

To flash update the ViewLink CATx firmware you will need the flash utility program and the firmware update file. The flash utility and current firmware file for the ViewLink CATx can be downloaded from our web site at www.rose.com/htm/download.htm.

After downloading the flash utility program and the firmware update file, execute the program "SetupRoseKVMUtil-x_xx.exe" (x_xx = version level) to install the flash utility program. Installation and set-up follow the standard Windows® installation procedure. Follow the on-screen instructions to properly install the flash utility.

When installation of the flash utility is complete, connect the ViewLink CATx receiver unit's RJ45F (Link) connector to the serial port (Com1/DB9M) on the PC the flash utility program was installed on using the flash utility cable (RJ45M to DB9F cable, P/N CAB-ATRF). Connect the power adapter to the ViewLink CATx receiver unit and apply power.

With all cable connections in place and the flash utility installed, execute the flash program "...\\Rose Electronics KVM Utility\\KVMUtility.exe". Depending on the installation options chosen, you can execute the utility by clicking on the Rose Electronics KVM Utility Icon from the desktop, Start Menu, or Quick Start toolbar. The utility program, when executed, will automatically start scanning for a connected supported Rose product (ViewLink CATx receiver). The utility program will automatically start scanning COM1 and the PS/2 port for a supported device. If a supported device is not found on COM1 or the PS/2 port, the program will display the information shown in Figure 4 To exit, press any key.

If the product has been connected to a port other than COM1, don't exit the utility program but modify the port to scan by clicking on "File" then "Scan for Device On". Next, click on the down arrow(s) to select a different COM port or change the serial parameters as shown in Figure 5.

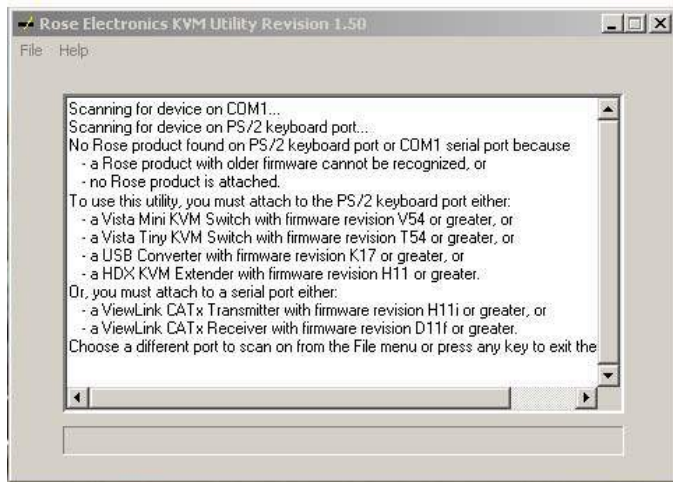


Figure 4. Flash Scan Screen

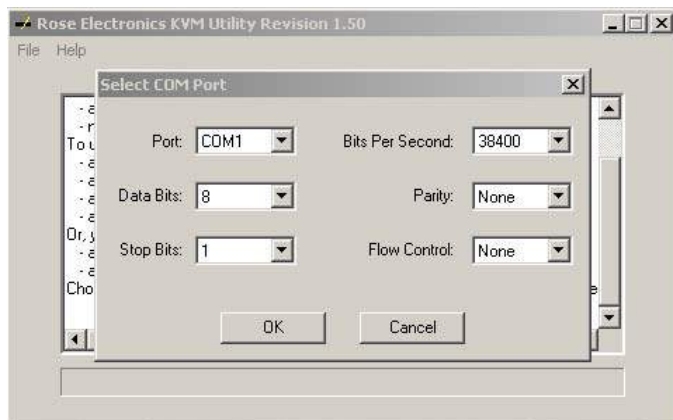


Figure 5. Flash Port Configuration

Upon successfully scanning and identifying a supported device, the detected information shown in Figure 6 will display showing the product type and the port it is connected to. The ViewLink CATx is ready to flash with the new firmware.

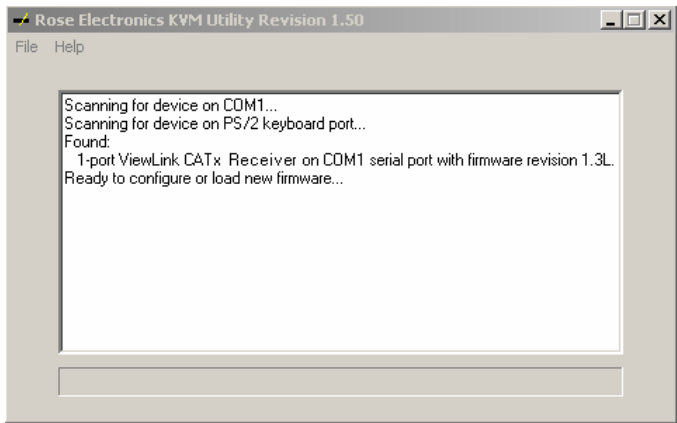


Figure 6. Flash scan

To load the updated firmware to the ViewLink CATx, click on "File", then "Load New Firmware". Select the downloaded firmware update file to load. This will be a file with .hex file extension. **Error! Reference source not found.** show the flash update screen which shows the progress and, when finished, the status of the flash process. When the message "New firmware successfully loaded on device" displays, the ViewLink CATx product is updated and ready to use with the updated firmware.

TroubleShooting

The troubleshooting section is used as a guide to understanding the capabilities of the ViewLink CATx and for general troubleshooting. If you have any problems or questions concerning the installation, operation or usage of the ViewLink CATx that is not covered in this manual, please contact Rose Electronics for technical support.

- **No video on the receiver monitor**
 - Check CATx connection at the receiver, transmitter, patch panels (if applicable)
 - Check HD15 video connection at the receiver and transmitter
 - Verify video is present at the video card output
- **Keyboard has no effect**
 - Keyboard and mouse cables reversed at the PC
 - Check keyboard cable connection at the Receiver
- **Mouse erratic or not functioning**
 - Mouse and keyboard cables reversed at the PC
 - Check mouse cable connection at the Receiver
- **No video, keyboard or mouse functions**
 - Check all cable connection at the Receiver
 - Check all cable connections at the Transmitter
 - Check RJ45 connector LEDs. If the green and yellow LEDs are alternately flashing, the firmware has become corrupt and the unit must be flashed. This can occur if a power loss occurs during the flash procedure.

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, configuring, or operating your CrystalView Plus, 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

The ViewLink CATx KVM extender has been tested for conformance to safety regulations and requirements, and has been certified for international use. Like all electronic equipment, the ViewLink CATx 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.
- 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 and connection cables designed for this Unit.
- Use only a grounded (three-wire) electrical outlet.
- Use only the power adapter provided with the ViewLink CATx.
- 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.

Appendix A – Part Numbers

Transmitter P/N	Description
VLT-MVP	Single access, PS/2, VGA
VLT-MVU	Single access, USB, VGA
VLT-MVB	Single access, PS2 & USB, VGA
VLT-MV0	VGA only
Receiver P/N	Description
VLR-AVP	Single access, PS/2, VGA
VLR-AVU	Single access, USB, VGA
VLR-AV0	VGA only
Kit P/N	Description
VLK-TMVPRAVP	Single access PS/2, VGA
VLK-TMVURAVU	Single access USB, VGA
VLK-TMVBRAVP	Single access, PS/2 & USB to PS/2, VGA
VLK-TMVBRAVU	Single access, PS/2 & USB to USB, VGA
-W option = Auto Skew compensation	
Cables	Description
CAB-08C5UTPnnn	CAT5 unshieded twisted pair
CAB-08C6UTPnnn	CAT6 unshieded twisted pair
CAB-08C5STPnnn	CAT5 shieded twisted pair
CAB-08C6STPnnn	CAT6 shieded twisted pair
CAB-ATRFnnn	DB9F to RJ45M flash utility cable
	USB to Barrel jack auxiliary power for transmitter
ACC-MD6M2MD6F	PS/2 "Y" cable for receiver
Power Adapter	Description
TFR-05D250FSUB-1.3	Power Adapter for Receiver units

Appendix B – Specifications

Dimensions	Width	Depth	Height
Transmitter (in / cm)	1.3 / 33	1.65 / 42	0.63 / 1.6
Transmitter*(in / cm)	2.17 / 5.5	2.52 / 6.4	0.72 / 1.8
Receiver (in / cm)	2.2 / 56	2.56 / 65	0.83 / 21

* DB25 Transmitter model

Video:

Resolution: Up to 1920 x 1440 @ 60Hz @ 300'
1024 x 768 @ 60Hz @ 1,000'

Compatibility:

Levels: SVGA, VGA, XGA, RGB
0.7V p-p
Sync type: Separate/composite TTL level

Support:

Keyboards: PS/2, USB
Video: VGA, SVGA, XGA, RGB
Mouse: PS/2 two button
Microsoft Compatible Mouse
Logitech Compatible Mouse
USB

Connectors:

PS/2 model: Video HD15F
Keyboard PS/2
Mouse PS/2
USB model: Video HD15F
Keyboard USB type A
Mouse USB type A
PS/2 & USB model has 2-PS/2 and 1-USB cable

Interconnect: CATx UTP/STP, EIA / (CAT5, 5e, 6) TIA 568

Power: Local From PC (Optional power adapter)
Remote + 5V 1.0A external

Environmental: Temp. 0°C – 45°C (32°F – 113°F)
Humidity 0% – 90% non-condensing

Approvals: CE

Appendix C – Grounding

This unit is designed to operate properly when connected to a desktop computer with a common earth ground to all equipment. When using this product on a laptop computer there may be video problems due to the laptop not being tied to earth ground. To clear up the video, the product must be physically connected to an earth ground connector.

Transmitter



install a lug connector that fits the thumb screws as shown and secure the ViewLink Catx to the computer's video port with the lug between the ViewLink Catx and the computer's chassis. Connect the other end of the grounding wire to an earth ground connector. This will establish a common earth ground between the laptop, the ViewLink Catx transmitter and other equipment. The video should display properly

Receiver



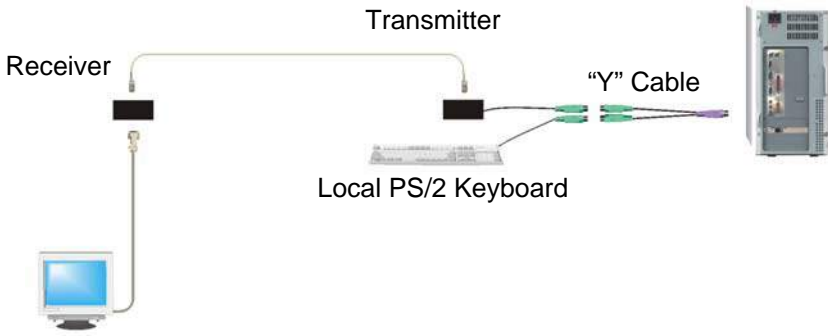
Remove the HD15 connectors mounting hardware as shown and install a lug connector that fits the threads and secure the connector back to the HD15 connector mounting position. Connect the other end of the grounding wire to an earth ground connector. This will establish a common earth ground between the ViewLink Catx receiver and other equipment.

Appendix D – Video Only Model

Video Only Models

Video only models should be connected as shown below. To obtain power and also power to a local keyboard for video adjustments, connect the provided PS/2 “Y” cable to:

- Your computer's PS/2 keyboard connector
- Connect one PS/2 cable connector the unit
- Connect the other PS/2 cable connector to the PS/2 cable from a keyboard.
- Ground the transmitter and receiver if necessary





Server Management



Solutions

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