Vista HDMI 4K

4K Ultra HD KVM Switch with USB2.0 and Audio

Installation
and
Operation Manual

LIMITED WARRANTY

Rose Electronics® warrants the Vista HDMI 4K KVM Switch 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.
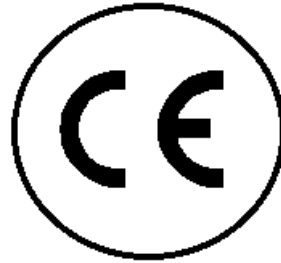
ALL EXPRESS AND IMPLIED WARRANTIES FOR THIS PRODUCT INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO A PERIOD OF ONE YEAR FROM THE DATE OF PURCHASE, AND NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THIS PERIOD. SOME STATES DO 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 WARRANTIED 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.

DECLARATIONS OF CONFORMITY

This is to certify that, when installed and used according to the instructions in this manual, the units listed and described here are shielded against the generation of radio interferences in accordance with the application of Council Directives 2014/30/EU and 2014/30/EU.

CE

This equipment has been found to comply with the limits for a Class A 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 their own expense.

These devices comply with Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2, RoHS II). The device labels carry a respective marking.

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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 the Rose Electronics Vista HDMI 4K KVM Switch. The Vista HDMI 4K is a 2K/4K, HDMI/USB/Audio Switch with USB2.0 sharing. The switch provides access and control to four 4K Ultra HD computers, using a USB keyboard/mouse and HDMI monitor.
Video resolutions supported include 1080p, 1080 3D and 3480x2160@30Hz (4K/30).
USB2.0 devices can be connected to the switch and shared between the 4 connected workstations. Digital audio output is supported.

The instructions in this manual assume a general knowledge of computer installation procedures, familiarity with cabling requirements, and some familiarity with HDMI and USB device operation.

Features

- Supports 1080p, 1080p 3D and 4K Ultra-HD, 36-bit color (3840×2160) @30Hz
- HDMI 1.4 (with audio) and HDCP compliant.
- Fully supported with Mac, PC, Linux, Sun Mac OS, Sun OS and Unix
- Supports USB2.0 devices, and USB-HID keyboard/mouse
- HDMI audio support, LPCM7.1, Dolby True HD, Dolby Digital Plus and DTS-HD Master Audio
- Access and control the switch via front panel (2 x 20) LCD and push buttons, keyboard hot-keys, RS-232 serial or optional TCP/IP (using TCP/IP over serial)
- Serial control interface via the DB9 serial port using the Rose RCS-4RS/D9 4-port remote control switch
- EDID learning and programming for all ports
- Zero-pixel loss with TMDS signal correction
- Independent switching and operation of the KVM station and USB2.0 ports
- Complete keyboard emulation for error free booting of connected PC's and servers

Package Contents

The package contents consist of the following items:

- Vista HDMI 4K Switch
- External power supply
- Power cable
- User Manual

Additional Items that may be required

- HDMI cable   CAB-HDMIMM006   6ft (2.0 meter)

                            CAB-HDMIMM010   10ft (3.0 meter)

- USB-AB cable   CAB-USBAB006   6ft (2.0 meter)

                            CAB-USBAB010   10ft (3.0 meter)

- Audio cable   CAB-SPMM006   6ft (2.0 meter)

                            CAB-SPMM010   10ft (3.0 meter)

These items may be ordered separately from Rose Electronics

All references to HDMI and USB cables in this document refer to the maximum recommended distances for each cable type. Maximum recommended cable distances should not be exceeded.

INSTALLATION and OPERATION

Installing the Vista HDMI 4K Switch

Unpack the Vista HDMI 4K switch and check the contents of the package.

If the switch is to be rackmounted, then attach a rackmount bracket (not included) to either side of the switch using the provided screw-set.

Before installing the switch into the rack, connect two PC's using the included HDMI/USB/Audio cables, and then connect a monitor, keyboard and mouse to the user port.

Power on the monitor, then the switch, followed by the PC's. Check to confirm the PC's can be switched (via front panel or keyboard hotkey) and that full operation of the switch is confirmed.

Once this operation has been confirmed, the switch can then be fully installed into the rack. Connect the remainder of the HDMI/USB/Audio cables to the Vista HDMI 4K switch

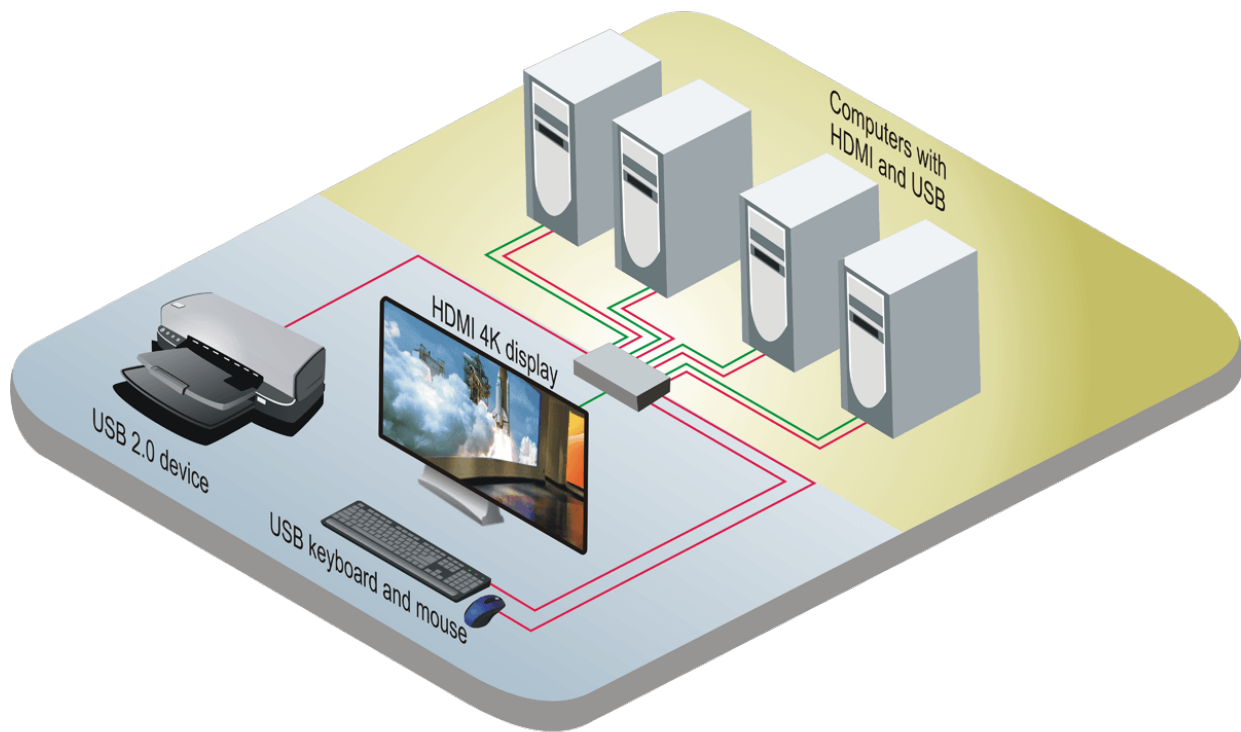| Vista HDMI 4K – Cabling schematic |
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Figure 1. Vista HDMI 4K cabling layout diagram

INSTALLATION and OPERATION

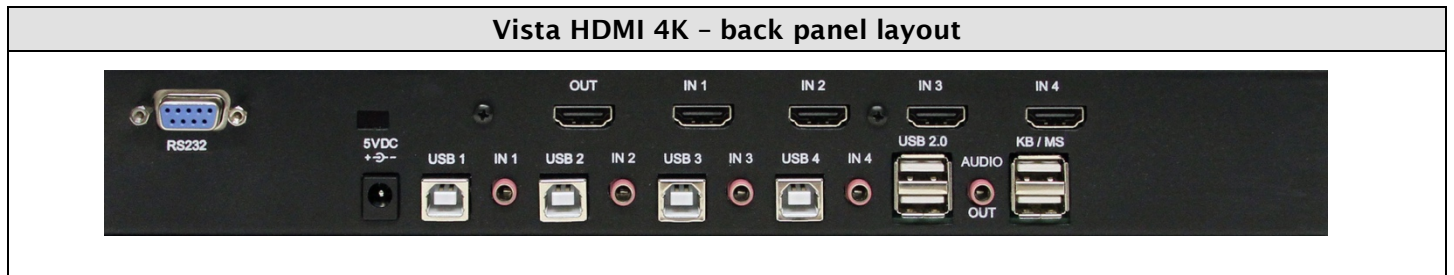| Vista HDMI 4K – back panel layout |
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Figure 2. Vista HDMI 4K back panel layout

Installing the Vista HDMI 4K

1. Ensure that power is disconnected from the Vista HDMI 4K.

2. Connect the HDMI cables and USB cables (male-A to male-B) from the computers to the respective ports on the Vista HDMI 4K. Connect the audio cables if required.

3. Connect the USB keyboard and mouse on the two USB ports on the right labelled "KB/MS". The two USB ports on the right are dedicated for keyboard and mouse emulation only. The two USB ports on the left are for other USB 2.0 peripherals (flash drives, printers, etc.)

4. Optionally connect speakers to the Audio-Out port located between the USB connectors and a serial port controller to the serial port.

5. Connect the display monitor to the HDMI OUT connector on the Vista HDMI 4K.

6. Connect the external 5V power supply and power on the Vista HDMI 4K.

Controlling the Vista HDMI 4K

Front Panel Control: To switch ports using the front panel, press the UP button to navigate up and DOWN button for down.

RS-232 Control: Use a male-to-female serial cable to connect a computer to the RS-232 port of the Vista HDMI 4K. Use terminal client software such as the HyperTerminal to connect to the Vista HDMI 4K. Make sure to use the standard communication mode of 9600 bps, 8, N, 1. This port can also be used for software upgrade.

Hotkey Commands: The Hotkey command is a keyboard sequence used to trigger an action on the Vista HDMI 4K through the use of the keyboard connected on the USB port of the Vista HDMI 4K. To activate the hotkey sequence, press the CTRL key twice and then enter the desired hotkey commands.

Commands	Hotkeys	RS-232 Control
Switch all devices (KVM, USB 2.0, and Audio)	[CTRL] [CTRL] m [port#] [ENTER]	//m[port #][ENTER]
Switch KVM only	[CTRL] [CTRL] c [port#] [ENTER]	//c[port #][ENTER]
Switch audio only	[CTRL] [CTRL] a [port#] [ENTER]	//a[port #][ENTER]
Switch USB2.0 only	[CTRL] [CTRL] u [port#] [ENTER]	//u[port #][ENTER]
EDID learning	[CTRL] [CTRL] e [ENTER]	//e[ENTER]
Same as front panel ◄ 1 button	[CTRL] [CTRL] ↑	n/a
Same as front panel ► 2 button	[CTRL] [CTRL] ↓	n/a
SmartPreview	[CTRL] [CTRL] p	//p
Reset	[CTRL] [CTRL] r	//r
Reset to factory defaults	[CTRL] [CTRL] f	//f

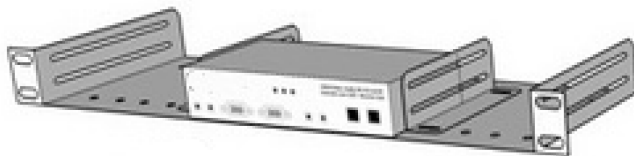**Table 1. Keyboard hotkey and RS-232 serial port commands**

SmartPreview PiP: The Vista HDMI 4K features SmartPreview technology, which enables simultaneous picture-in-picture monitoring of the other sources connected to the switch. This technology allows users to monitor the other connected video sources without constantly needing to switch back and forth.

EDID Learning and Programming: The Vista HDMI 4K features plug-and-play EDID, making the switch easy to implement in virtually any application. As soon as a user plugs in a monitor, the switch automatically learns and copies the EDID to all ports. The plug-and-play EDID helps make switching hassle free and simple.

Keyboard and Mouse Emulation: The Vista HDMI 4K features USB keyboard and mouse emulation for faster and reliable switching through the use of hotkey sequence commands.

Rackmount Kit:
The Vista HDMI 4K can be mounted on a 19" rack shelf, fitting only 1 unit per shelf.

Control using the RS-232 port

Controlling the Vista HDMI 4K via RS-232 requires an RS-232 card installed on your computer or a USB to RS-232 adapter. Below are instructions on how to create an RS-232 connection between a PC and the Vista HDMI 4K switch

Use a terminal client software to connect the host PC or notebook to the switch. Make sure to use communication settings 9600 bps, N, 8, 1 No flow control.

Check the device and your PC to determine if you need a male to male or a male to female cable and how long it needs to be. The Vista HDMI 4K requires a straight through cable. You can use a Null Modem Adapter to convert a crossed cable to a straight through cable. Examples of crossed and straight thorough cable pin-outs are shown below. The standard maximum length for an RS-232 cable is 50 feet (15 meters).
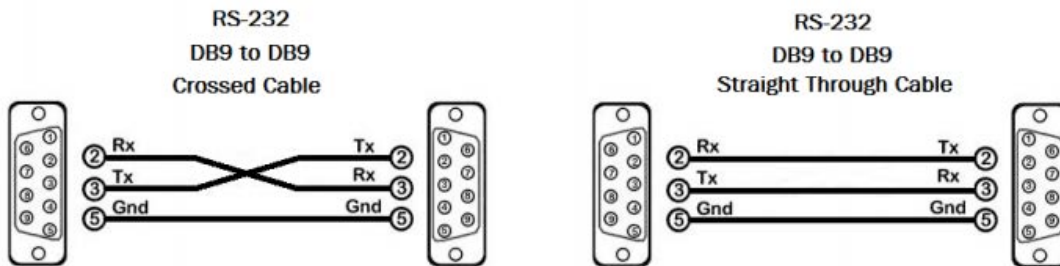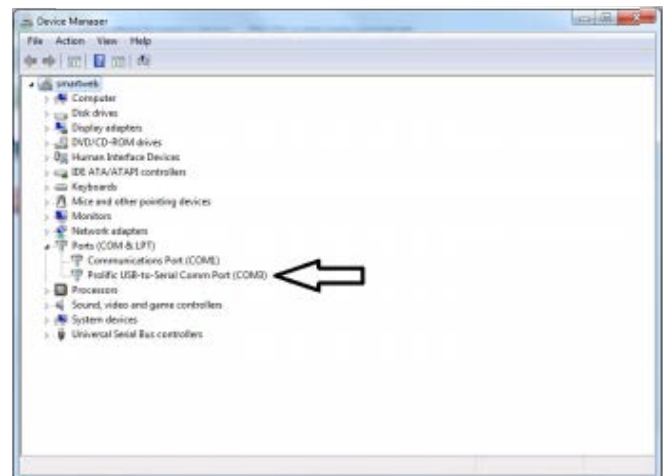

Figure 3. Examples of 9 pin RS-232 Straight Through and Crossed Cables

Establish a connection to the Vista HDMI 4K switch:

- Connect an RS-232 cable to the RS-232 connector on the PC.

- Connect the other end of the cable to the RS-232 port of the Smart-AVI device.

- Use Windows Control Panel / Device Manager to identify the Com port number. See instructions and Figure 7-2 below.

- Power on the device.

If you are using a USB to COM port adapter on a Windows PC and need to identify the COM port used, do the following:

- Click on the start button.
- Click on Control Panel.
- Click on Device Manager.
- Click on the arrow next to Ports (COM & LPT).

You should see the name of your adapter and the COM port number in use.

Safety

The Vista LC DVI KVM Switch, 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 installing your product, consult the appropriate section 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

Part Numbers	Description
KVM-4THD/4K	Vista HDMI 4K, 4 Port KVM Switch, HDMI+USB2.0, 2K/4K
CAB-HDMIMM006	HDMI M/M 6ft (2.0m) cable
CAB-HDMIMM010	HDMI M/M 10ft (3.0m) cable
CAB-USBAB006	USB-AB 6ft (2.0m) cable
CAB-USBAB010	USB-AB 10ft (3.0m) cable
RM-FR19	Rackmount shelf for 19" rack
Chassis Dimensions (W x D x H) and Weight	
Dimensions	12.75 × 5.75 × 2.0-inch, (324 × 146 × 50 mm)
Weight	3.5lb (1.6kg)
Power Requirements	
Power Source	100-240VAC, AC input, 5V/2A, Max 20 Watts
Video	
Video Format	HDMI 1.4
Input Equalization	Automatic
Pixel Clock Speed	Maximum 300MHz
Bandwidth Frequency	10.2Gbps
Resolution/Refresh Rate	1080p @60Hz up to 4K 3840 x 2160 @30Hz
Video Input/Output Cable Length	Up to 20ft (6.0m) each side
Audio	
	Frequency response: 20Hz ~ 20KHz, Nominal Level: 0 to 1.0V, Impedance 600ohm, Common Mode: Rejection @60dB
Controls	
PC Selection	2 x 20 character LCD screen with source selection buttons RS-232 DB9(F) serial port and Keyboard hotkey control
Status LED's	4 LED's on the front panel for PC selection/operation Status 1 / Status 2 = Green
Emulation	Keyboard and mouse
Serial	RS-232, DB9(F), 9600bps, N,8,1 no flow control
Ethernet support	Optional via Serial/TCP-IP link
Connectors	
Input	4 × HDMI (female) 1.4 4 × USB-B Type 4 × 3.5mm stereo audio jack 1 × RS-232 (DB9F)
Output	1 × HDMI 1.4 (female) 2 × USB-A for Keyboard and mouse 2 × USB-A USB2.0 internal hub for USB2.0 device connection 1 × 3.5mm stereo audio jack
System Compatibility	
Hardware OS Support	PC's, SUN, MAC Windows, Linux, Unix, MAC OS, SUN OS
Environmental	
Operating Temp	23°F to 95°F (-5°C to 35°C)
Storage Temp	-4°F to 185°F (-20°C to 85°C)
Operating Humidity	5-95% relative, non-condensing
Approvals	FCC and CE certified, RoHS compliant

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WWW.ROSE.COM ▪ **sales@rose.com** ▪ **(800) 333-9343**

Rose Electronics ▪ 10707 Stancliff Road ▪ Houston, Texas 77099
Rose USA (281) 933-7673 ▪ Rose Europe +49 (0) 2454 969442
Rose Asia +65 6324 2322 ▪ Rose Australia +61 (0) 421 247083

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