UNIMUX® Series

UNIMUX-HD4K18GB-4LC

Low-Cost 4K 18Gbps HDMI USB KVM Switch

Installation and Operation Manual

UNIMUX-HD4K18GB-4LC (Front and Rear Views)

UNIMUX-HD4K18GB-2LC (Front and Rear Views)

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INTRODUCTION

The UNIMUX™ 4K 18Gbps HDMI USB KVM Switch allows a user to control up to four HDMI 2.0 Ultra-HD 4Kx2K 60Hz 4:4:4 USB computers with one USB keyboard, USB mouse and 4K HDMI monitor.

Features:

- Supports Ultra-HD 4Kx2K resolutions to 3840x2160 and 4096x2160 @30/50/60Hz YUV 4:4:4, HDTV resolutions to 1080p @144Hz, and up to 1920x1200 (WUXGA).
- HDMI features supported:
  - HDMI 2.0
  - 8-bit, 10-bit, and 12-bit Deep Color
  - Dolby TrueHD, DTS-HD Master Audio, Dolby Digital, Dolby Digital+, Dolby Atmos, LPCM 2/5.1/7.1CH, DTS 5.1, and DTS:X
  - YUV 4:4:4, 4:2:2, 4:2:0, and RGB
  - Bandwidth up to 600 Mhz (18Gbps)
  - 3D (1080p @60Hz)
  - HDR
- HDCP 2.2 compliant.
- Compatible with USB computers (PC and MAC) with HDMI outputs.
- Control the switch through the front panel buttons, keyboard commands, or RS232.
- Two transparent USB 2.0 ports (low/full/high speed), in addition to keyboard and mouse ports, for connecting USB devices such as printers, game controllers, USB flash drives, touch screen monitors, whiteboards, etc.
  - Supports high-speed (480 Mbps), full speed (12 Mbps), or low speed (1.5 Mbps) USB devices.
  - Supports Plug-n-Play specification.
  - No power supply required – powered from attached computers.
- Mounting brackets included for easy surface/wall mounting.

MATERIALS

Materials supplied with this kit:

- NTI UNIMUX-HD4K18GB-4LC 4 Port HDMI USB KVM Switch
- 1x USB Type A to 5.5x2.1mm DC jack cable- 41.73 in. (1,060mm) long
- 4 x USB 2.0 Type A to Type B male-to-male cable, 50 in. (1270mm)

-OR-

- NTI UNIMUX-HD4K18GB-2LC 2 Port HDMI USB KVM Switch
- 1x USB Type A to 5.5x2.1mm DC jack cable- 41.73 in. (1,060mm) long
- 2 x USB 2.0 Type A to Type B male-to-male cable, 50 in. (1270mm)

Both Models Include:

- URL Slip with path to this manual
- Mounting ears and screws
- 3-pin Screw Terminal for RS232

Maximum HDMI Cable Length

NTI Cable	1920x1080@60Hz	3840x2160 and 4096x2160
HD-xx-MM **(xx ≤ 50)**	50 ft	20 ft (@60Hz)
HD-ACT-xx-MM **(xx ≤ 50)**	50 ft	50 ft (@60Hz)
HD-ACT-xx-MM **(xx > 50)**	100 ft	100 ft **(@30Hz)** **(video input ONLY)**
HD4K18GB-FO-xxM-MM	100 m	100 m (@60Hz)
DVI-HD-xM-MM (video input ONLY)	5 m	Not applicable
DP-HD-xx-MM (video input ONLY)	15 ft	15 ft (@60Hz)
USB3C-HD4K-xx-MM (video input ONLY)	10 ft	10 ft (@60Hz)

Cables can be purchased from Network Technologies Inc by calling **(800) 742-8324** *(800-RGB-TECH) in the US and Canada or* **(330) 562-7070** *(worldwide).*

FEATURES AND FUNCTIONS

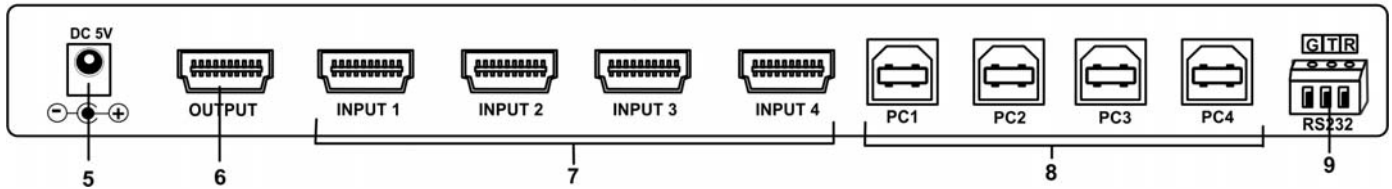**UNIMUX-HD4K18GB-4LC**
FRONT VIEW
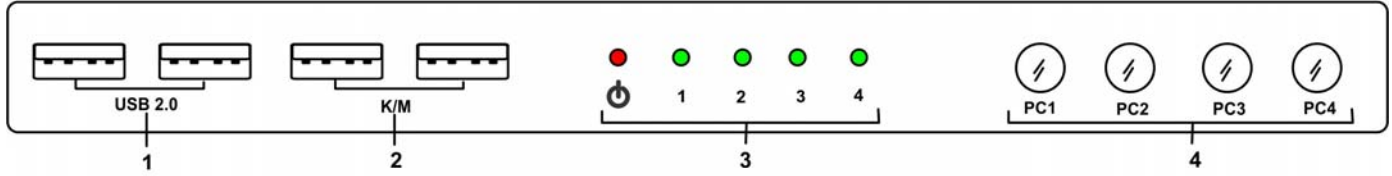
REAR VIEW

#	LABEL	CONNECTOR/LED	DESCRIPTION
1	**USB 2.0**	USB Type A Female	For transparent USB devices to connect- supports low/full/high speed USB
2	**K/M**	USB Type A Female	For keyboard and mouse to connect
3	**----**	LEDs	Illuminates to provide status of switch and individual ports
4	**PCx**	Button	Press to manually switch to between input ports
5	**DC 5V**	Power Jack	For connection of the USB power adapter cable
6	**OUTPUT**	HDMI Female	For connection of the 4K HDMI display device
7	**INPUT x**	HDMI Female	For connection of the 4K video cables from computers
8	**PCx**	USB Type B Female	For connection of the USB cables from computers
9	**RS232**	3-Terminal Block	For connection of the RS232 controlling device

UNIMUX-HD4K18GB-2LC
FRONT VIEW
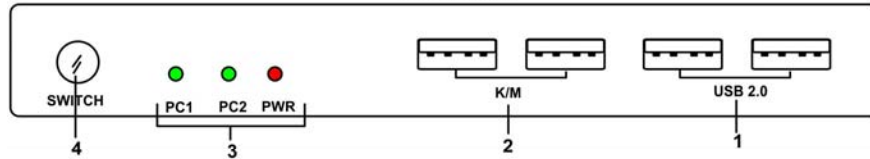
REAR VIEW
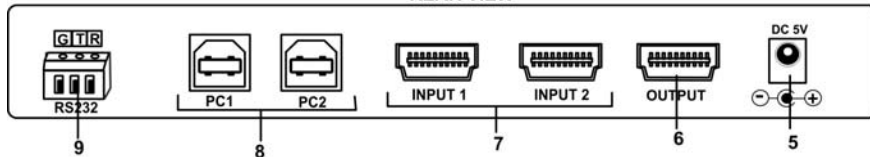
CONNECTIONS

1. Connect HDMI cables from computers to the "INPUT x" ports. See "Cables" under "Technical Specifications" on page 6 for the many options available.

2. Connect USB cables (50 inch cables supplied) from computers to the "PCx" ports.

3. Connect a keyboard and mouse to the "K/M" USB ports. These will be used to control the UNIMUX as well as the connected computers

4. (Optional) Connect USB devices (touchscreen, flash drive, whiteboard, printer, etc) to the "USB 2.0" ports.

5. Connect the USB to DC jack cable between a USB power source and the "DC 5V" jack on the UNIMUX.
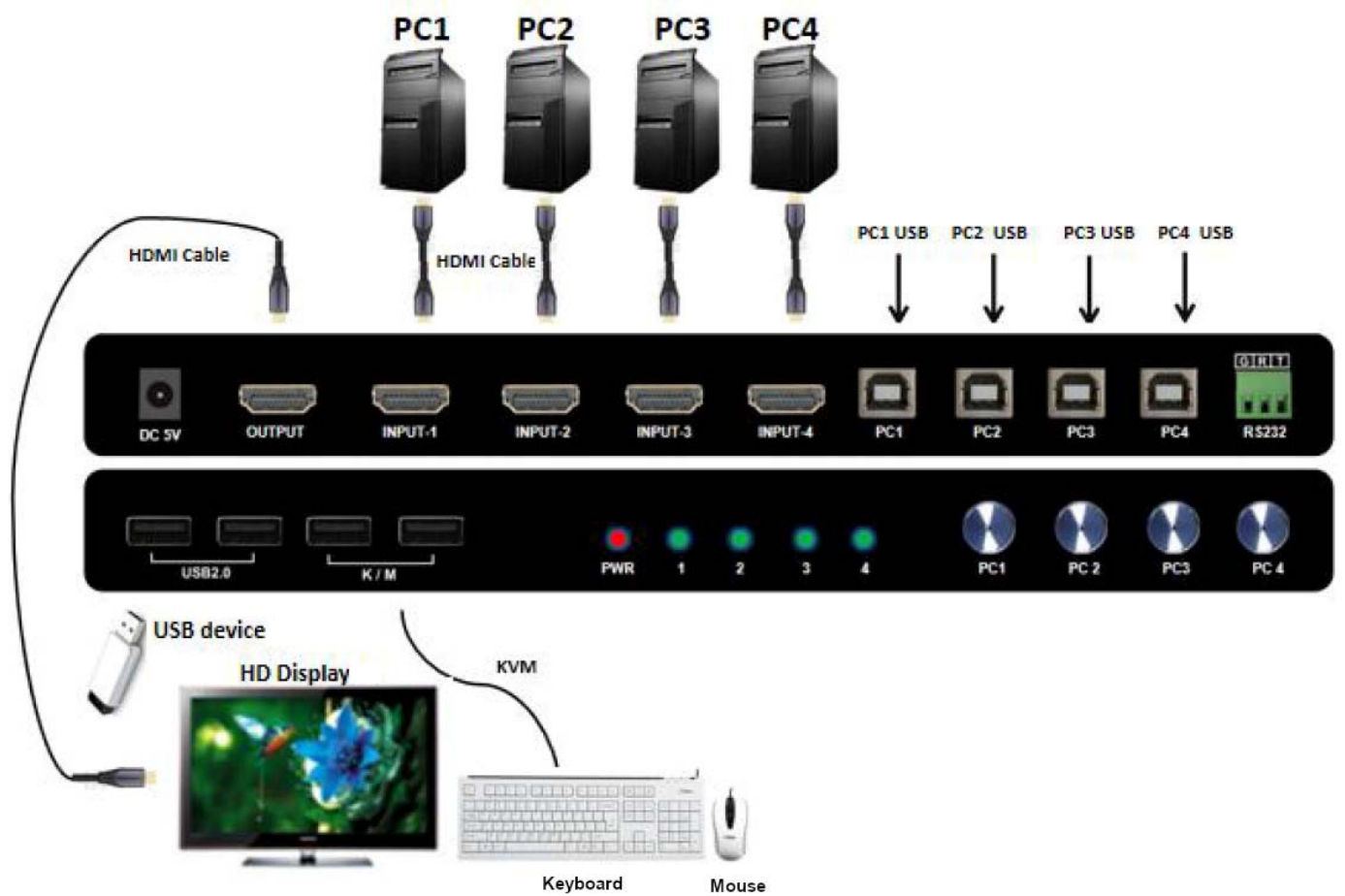
CONTROL METHODS

The UNIMUX-HD4K18GB-xLC can be controlled using four different methods:

        1. Push the "PCx" button on the front panel

        2. Using the keyboard and selecting a Hot Key to use

        3. Using a device with RS232 Terminal Program

        4. Using mouse buttons (only mice with center button)

Buttons

Press any "PCx" button (or "Switch" on the 2-Port model) to change the port the user is connected to.   The LEDs on the front will indicate which port is active.

Hot Keys

There are four different Hot Key modes (three 1-key modes and one 2-key mode) that can be selected and used to control the UNIMUX.

1. Scroll Mode (the Default)

2. Caps Mode

3. Num Mode

4. Ctrl+Shift Mode (a 2-key mode)

To turn ON one of the first three 1-key modes, press the associated single key twice quickly (Scroll Lock, Num Lock, or Caps Lock) then press key 1 or 2. Key sequence must be complete within 5 seconds.

For the fourth mode, a 2-key "Ctrl+Shift Mode", press and hold <Ctrl> key, press and hold Shift key, then press key 1 or 2 and release all.

Scroll Mode Hotkeys

Hotkeys combination	Hotkeys description
[Scroll] ++ [Scroll] + [1/2/3/4] *1	Switch to PC1/PC2/PC3/PC4
[Scroll] ++ [Scroll] + [→or↓]	Switch to the next PC
[Scroll] ++ [Scroll] + [←or↑]	Switch to the previous PC
[Scroll] ++ [Scroll] + [S]	Turn on/turn off the Auto Polling function; the default switching time interval is 5 seconds, (press "ESC" to exit) (see page 7)
[Scroll] ++ [Scroll] + [S] + [n] *2	Set the polling switching time interval, valid range : 5-999 seconds
[Scroll] ++ [Scroll] + [ESC]	Restore factory default settings
[Scroll] ++ [Scroll] + [T]	Turn on/turn off Auto Detect function (see page 7)
[Scroll] ++ [Scroll] + [Caps]	Switch to Caps hotkey mode
[Scroll] ++ [Scroll] + [Num]	Switch to Num hotkey mode
[Scroll] ++ [Scroll] + [Ctrl] *3	Switch to [Ctrl]+[Shift] hotkey mode

Caps Mode Hotkeys

Hotkeys combination	Hotkeys description
[Caps] ++ [Caps] + [1/2/3/4]	Switch to PC1/PC2/PC3/PC4
[Caps] ++ [Caps] + [→or↓]	Switch to the next PC
[Caps] ++ [Caps] + [←or↑]	Switch to the previous PC
[Caps] ++ [Caps] + [S]	Turn on/turn off the Auto Polling function; the default switching time interval is 5 seconds, (press "ESC" to exit)

[Caps] ++ [Caps] + [S] + [n]	Set the polling switching time interval, valid range：5-999 seconds
[Caps] ++ [Caps] + [ESC]	Restore factory default settings
[Caps] ++ [Caps] + [T]	Turn on/turn off Auto Detect function
[Caps] ++ [Caps] + [Scroll]	Switch to Scroll hotkey mode
[Caps] ++ [Caps] + [Num]	Switch to Num hotkey mode
[Caps] ++ [Caps] + [Ctrl]	Switch to [Ctrl]+[Shift] hotkey mode

Num Mode Hotkeys

Hotkeys combination	Hotkeys description
[Num] ++ [Num] + [1/2/3/4]	Switch to PC1/PC2/PC3/PC4
[Num] ++ [Num] + [→or↓]	Switch to the next PC
[Num] ++ [Num] + [←or↑]	Switch to the previous PC
[Num] ++ [Num] + [S]	Turn on/turn off the Auto Polling function; the default switching time interval is 5 seconds, (press "ESC" to exit)
[Num] ++ [Num] + [S] + [n]	Set the polling switching time interval, valid range：5-999 seconds
[Num] ++ [Num] + [ESC]	Restore factory default settings
[Num] ++ [Num] + [T]	Turn on/turn off Auto Detect function
[Num] ++ [Num] + [Scroll]	Switch to Scroll hotkey mode
[Num] ++ [Num] + [Caps]	Switch to Caps hotkey mode
[Num] ++ [Num] + [Ctrl]	Switch to [Ctrl]+[Shift] hotkey mode

Ctrl + Shift Mode Hotkeys

Hotkeys combination	Hotkeys description
[Ctrl] ++ [Ctrl]	Switch to next PC
[Ctrl + Shift + 1/2/3/4] *4	Switch to PC1/PC2/PC3/PC4
[Ctrl + Shift + →or↓]	Switch to the next PC
[Ctrl + Shift + ←or↑]	Switch to the previous PC
[Ctrl + Shift + S]	Turn on/turn off the Auto Polling function; the default switching time interval is 5 seconds, (press "ESC" to exit)
[Ctrl + Shift + S + n]	Set the polling switching time interval, valid range：5-999 seconds
[Ctrl + Shift + ESC]	Restore factory default settings
[Ctrl + Shift + T]	Turn on/turn off Auto Detect function
[Ctrl + Shift + Scroll]	Switch to Scroll hotkey mode
[Ctrl + Shift + Caps]	Switch to Caps hotkey mode
[Ctrl + Shift + Num]	Switch to Num hotkey mode

Other Hotkeys

Hotkeys combination	Hotkeys description
[* + 1/2/3/4]	Switch to PC1/PC2/PC3/PC4
[Middle mouse button + Right mouse button]	Switch to the next PC
[Middle mouse button + Left mouse button]	Switch to the previous PC

Notes：

[*1]: "++" means press 2 times in quick succession,
For example: [Scroll] ++ [Scroll] + [1] means press Scroll key twice in quick succession, then press the number "1" again
   The detection timeout between each hotkey code is 2 seconds, so if the Scroll key is pressed once, and then pressed again after 2 seconds, the hotkey combination will be invalid.

[*2]: "n" can be numbers 1/2/3,
For example: "Scroll ++ Scroll + S + 1 + 2 + 0" means to press the "Scroll" key twice in quick succession, then press the letter "S" and release it, press the number "1" key and release it, then press the number "2" key and release it, and lastly press the number "0" key and release it.   The result will be to set the polling time interval to 120 seconds.

[*3]: "CTRL" and "SHIFT" keys can be used regardless of whether they are left or right.

[*4]: The hotkey [Ctrl + Shift + 1] means pressing and holding the "Ctrl" key, then pressing and holding the "Shift" key, and then pressing the number "1" key and releasing all keys.

NOTE: Only one of the four hotkey switch modes can be used at a time.
For example; When you use the "Scroll" mode to switch, the other three modes will not work. If you want to switch to other hotkey modes, please operate according to the above tables.

Auto Polling

When Auto Polling is turned ON, the UNIMUX will automatically switch from one port to the next port for the length of time polling has been configured for.   The UNIMUX will switch from port 1, to port 2, to port 3, to port 4 and back to port 1.

Auto Detect

When Auto-Detect is turned ON, the switch will automatically detect the connection of the connected computer's USB interface (at USB ports 1-x) and perform intelligent switching.
- If it detects that a new computer's USB interface is connected, it will automatically switch to the newly connected computer;
- If the USB interface is disconnected, it will automatically switch to the next connected computer.
- If it is detected that the USB interface of the non-enabled computer is disconnected, the connections will not be switched.
- If you turn ON the Auto-Detect function and then also turn ON the Auto Polling function, the UNIMUX will automatically skip the USB port that does not have a computer connected.

Mouse Buttons

If your mouse has three buttons, it can be used to change ports on the UNIMUX.

Pressing the center button and left or right button will cause the UNIMUX to switch

to the previous or next port (respectively).

RS232 Control

If you want to control the UNIMUX using RS232, connect a cable between your control device and the "RS232" terminals as follows:

RS232 host's TxD to UNIMUX "R" terminal

RS232 host's RxD to UNIMUX "T" terminal

RS232 host's GND to UNIMUX "G" terminal

Download and install the **serial_control_utility.exe** from our website at https://www.networktechinc.com/4k-60hz-hdmi-usb-kvm-switch.html#tab-5 . Setup the controlling device port and the application to communicate with the UNIMUX using these settings:
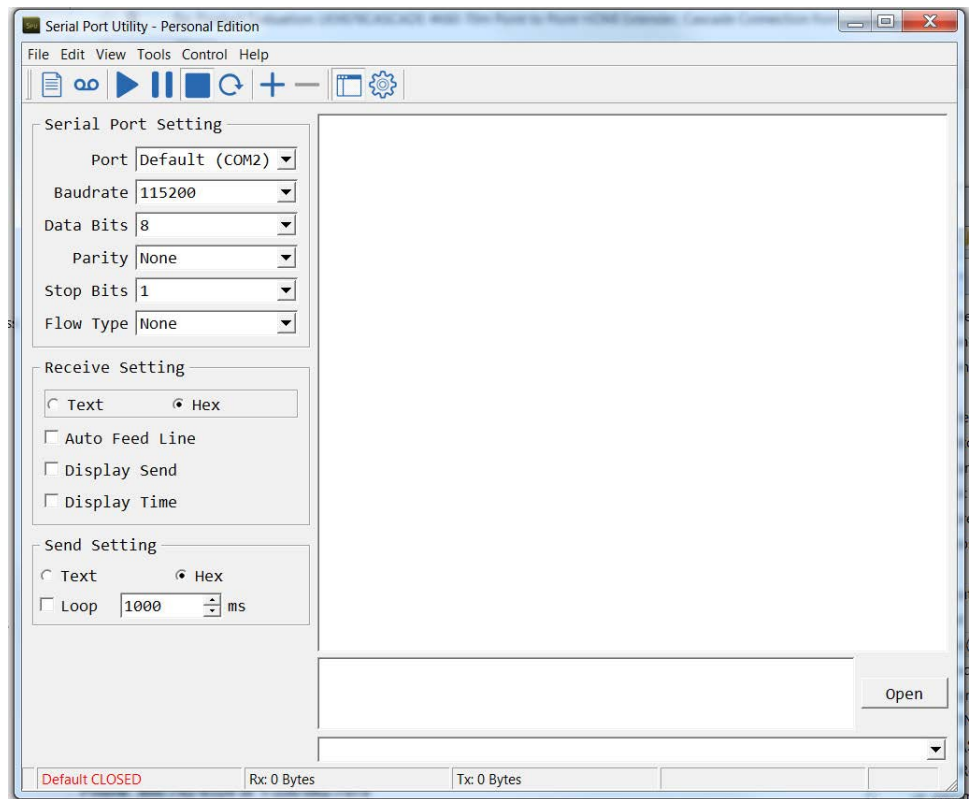
Baud Rate : 115200

Data Bits: 8

Parity: None

Stop Bits: 1

Set the "Receive Setting" and "Send Setting" to Hex

Hexadecimal Command Packet	Function Description
57 AB 32 01 59 8E	Switch to the specified PC
57 AB 32 01 5A 8F	
57 AB 32 01 5B 90	
57 AB 32 01 5C 91	
57 AB 33 00 35	Switch to the next PC
57 AB 34 00 36	Switch to the previous PC

TECHNICAL SPECIFICATIONS

Hosts	• Female HDMI-A connectors. • Female USB Type B connectors. • Supports USB-enabled computers (Windows, Linux and MAC) with HDMI video. • Multiplatform support: Windows 7/10/11, Windows Server 2008/2012/2016/2019/2022, Linux, and MAC OS 10/11/12/13. • Compliant with HDMI 2.0 and HDCP 2.2 standards.
Monitor	• Supports Ultra-HD 4Kx2K resolutions to 3840x2160 and 4096x2160 @30/50/60Hz YUV 4:4:4, HDTV resolutions to 1080p @144Hz, and up to 1920x1200 (WUXGA). • One female HDMI-A connector. • Compliant with HDMI 2.0 and HDCP 2.2 standards.

Devices	• Two female USB 1.1 Type A connectors for keyboard and mouse.
	  • Supports full-speed (12 Mbps) or low-speed (1.5 Mbps) USB keyboard and mouse.
	  • Keyboard and mouse are hot-pluggable.
	• Two transparent female USB 2.0 Type A connectors for additional USB devices.
	  • Supports high-speed (480 Mbps), full-speed (12 Mbps) and low-speed (1.5 Mbps) USB devices including, but not limited to touchscreen monitors, CAC card readers, printers, scanners, and thumb drives.

Power	• Powered from attached computers. • Power consumption: 6W (max) • The combined current consumption of the connected USB devices cannot exceed 1.0A.
Operating temperature	23 to 158°F (-5 to 70°C).
Operating relative humidity	5 to 90% non-condensing RH.
Dimensions	• 2-Port WxDxH: 5.71x2.69x0.89 in (145x68x22 mm) • 4-Port WxDxH: 9.09x2.71x0.89 in (231x69x23 mm)
Approvals	CE, FCC, RoHS

Cables

Interface cables between the computers/monitor and the switch are required for proper operation.
- o Supports cable lengths to 15 feet for 4Kx2K resolutions and 50 feet for 1080p.
  - o Longer cables can be used provided they have a built-in video equalizer (also known as "active HDMI cables").
- Use HD-xx-MM cable to connect an HDMI source or display (not included).
- Use HD-ACT-xx-MM 4K HDMI Active Cables to connect an HDMI source or display up to 100 feet (not included).
  - o HD-ACT-20/25/30/40/50/60-MM supports resolutions to 4K@60Hz.
  - o HD-ACT-75/100-MM supports resolutions to 4K@30Hz.
- Use DP-HD-xx-MM cables to connect a DisplayPort computer up to 15 feet away from the switch (not included).
  - o Supports resolutions up to 4k@30hz 4:4:4 and 4K@60Hz 4:2:0.
- Use USB3C-HD4K-xx-MM to connect a 4K@60Hz computer with USB Type C connector up to 10 feet (not included).
- Use DVI-HD-xM-MM to connect a DVI computer up to 5 meters (not included).
  - o Supports resolutions to 1080p.
- 4.17 ft (1.27m) male USB Type A to male USB Type B interface cables included for use between the computers and switch.
  - o Two included with 2-port and four included with 4-port switch.

WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at http://www.networktechinc.com for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

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