MAGENTA

by ⟨⟩⟩ tvONE®

Pathfinder 800 series
MG-KVM-831
MG-KVM-832

Quick Start Guide V1.00

In this guide

Thanks for buying this Magenta Pathfinder device. Pathfinder series provide a scalable, zero latency, KVM (Keyboard, Video, Mouse, and USB 2.0) extension and switching solution. Capable of over 3000 high-quality endpoints in a single system, Pathfinder is the perfect solution for mission critical control and collaboration including medical, broadcast, and control room operations.

Pathfinder devices come with a choice of Small Form-factor Pluggable (SFP) transceivers. Choose from single-mode optical fiber, multi-mode optical fiber, or RJ45 Ethernet for a fully flexible experience.

Features

Some features are only available in Pathfinder networks that include 500 and 800 series devices.

- KVM matrixing solution with over 3000 endpoints

- Use either Ethernet or fiber optic cable for KVM, USB, and video

- Up to 4K @60 Hz video

- Mix-and-match HD and 4K endpoints

- Zero latency performance

- Point-to-point extension up to 20 km (12 miles)

- Mix copper and fiber cables for maximum flexibility in your system design

- Plug'n'play installation over IP

- Monitor up to 4 PCs from a single 4K monitor, keyboard, and mouse with WindowView

- Extend PC desktop to dual displays over single cable

- Work across multiple PCs seamlessly with Cross-Click

- Local monitor loop out

Hardware recommendations

At tvONE, we design our products to the highest quality standards. To get the best results from our products, we recommend that you use the best quality connectors, cables, and adapters. Consider the points below when you choose accessories and position equipment.

- For best results with HDMI/DVI, use cables under 15 m long, or shorter if you use connection adapters. If you need to place your products more than 15 m apart, use a signal extender.

- See our range of signal extenders at tvone.com/signal-extension-systems.

- For best results with HDMI, use High Speed or Premium High-Speed HDMI cables.

- In industrial environments, use shielded Ethernet cables for signal extension systems.

- Shielded Ethernet cables are often marked F/UTP or FTP. Use shielded Cat 6 cables with HDBaseT input and output modules and Streaming media and 4K playback input modules.

Multi-mode optical fiber

- Maximum length 800 m (1640 feet).

- Duplex Multimode 50/125µ (OM2).

- LC connector 850 nm.

Single-mode optical fiber

- Maximum length 20 km (12.43 miles).

- Duplex single-mode.

- LC connector 310 nm TX -1550 nm RX.

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CAT 7 cables

- The pins are connected 1:1. Caution: the cable pairs must be twisted to EIA/TIA- 568A (rare) or EIA/TIA-568 B (common) pairs. Erroneous assignments cannot be found with a simple cable tester.

- The pins for the green pair of wires are not adjacent to one other.

- The cable must at the very least meet the CAT 7 specifications and be suitable for 10 Gigabit transmission.

- The cable should meet one of the following standards: Class D ISO/IEC 11801:2002 or EN 50173-1:2002. Schema EIA/TIA-568 B.

- Only use shielded installation cable with min. cross section of 24 AWG throughout the length.

- The shield should be contiguous and connected to both ends. A shielded patch cable is allowed for connection to the device. Schema EIA/TIA-568 B.

DisplayPort cables

- Maximum length 1.8 m (5.9 feet).

HDMI to DisplayPort adapters

Some TVs require their HDMI UHD Color feature enabled to work correctly with adapters.

Network switches

Your Pathfinder network requires its own dedicated network. As Pathfinder uses multicast, you must place it on its own VLAN or dedicated switches.

The network switch must fulfil the following specifications:

- The Pathfinder 800 series requires a 10 Gigabit switch, with true port-to-port transfer rates of 1 Gigabit/second.
- Network switches must support IGMP snooping and IGMP snooping must be switched on.

System requirements for Pathfinder Control

- Windows 7 (32bit/64bit) or higher

- 1 GB RAM

- 50 MB free storage

- 1 Gbit dedicated network interface

About your Pathfinder 800 series device

The Pathfinder 800 series includes a DVI encoder and decoder, capable of extending a 1080p signal up to 20 km (12 miles).

MG-KVM-831 encoder rear panel

🎤	Audio in from PC. Connect to the PC with 3.5 mm jack.
🔊	Audio out to PC. Connect to the PC with 3.5 mm jack.
RS232	Connect to a control device with Ethernet cable.
⏻	Power on and off.
⏚	Grounding screw. Connect to electrical ground.
90-240VAC	Connect to electrical outlet.
USB 2.0	Connect to USB port of PC.
LAN	Currently disabled.
DP IN	DisplayPort in. Connect to the PC you want to control.
DP OUT 1 DP OUT 2	DisplayPort out. Connect to monitors.
RED. POWER 12VDC	Redundant power. Connect to 12 V power supply.
KVM-LINK	Depending on your SFP, connect to one of the following: ▪ Single-mode optical fiber cable ▪ Multi-mode optical fiber cable ▪ Ethernet cable

MG-KVM-832 decoder rear panel

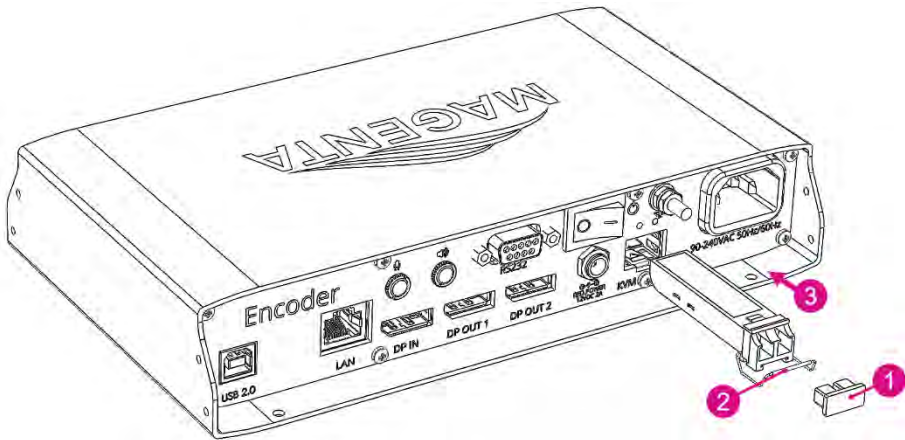|	
🎤	Audio in from microphone or other audio device. Connect to audio device with a 3.5 mm jack.
🔊	Audio out to speakers or other audio device. Connect to audio device with a 3.5 mm jack.
RS232	Connect to a control device with Ethernet cable.
⏻	Power on and off.
⏚	Grounding screw. Connect to electrical ground.
90-240VAC	Connect to electrical outlet.
USB 2.0	Connect to keyboard, mouse, or other USB device.
LAN	Currently disabled.
DP OUT 1 DP OUT 2	DisplayPort out. Connect to monitors.
RED. POWER 12VDC	Redundant power. Connect to 12 V power supply.
KVM-LINK	Depending on your SFP, connect to one of the following: ▪ Single-mode optical fiber cable ▪ Multi-mode optical fiber cable ▪ Ethernet cable

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Fitting or replacing the SFP module

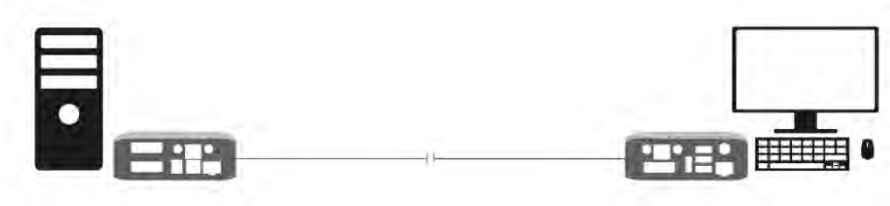Only use SFP modules from, or recommended by, tvONE.

1. Remove the black dust protector from the SFP module.
2. Pull the metal latch of the SFP module forwards until it is at a right angle.
3. Insert or replace the SFP module.
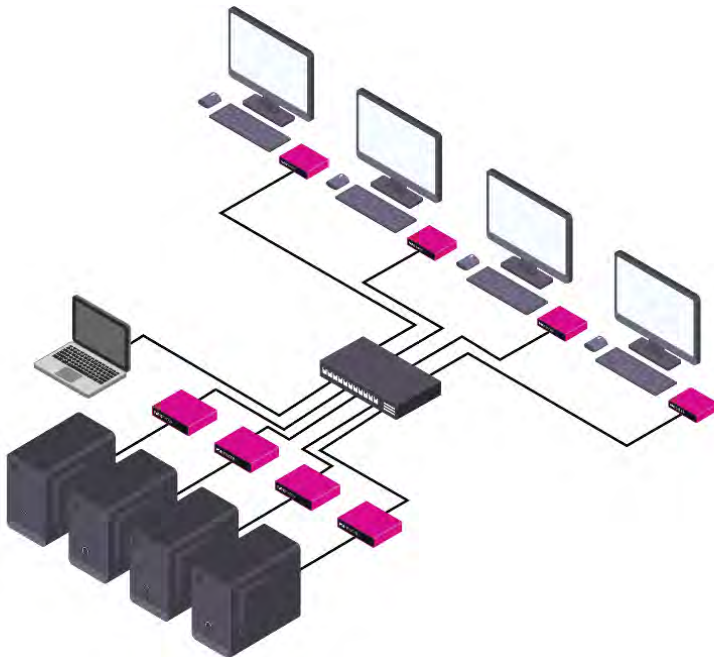4. Push the metal latch back into position.

Installing single and multiple endpoints

You can use your Pathfinder 800 series devices to extend a single PC, or you can use a 10G network switch to connect multiple endpoints.
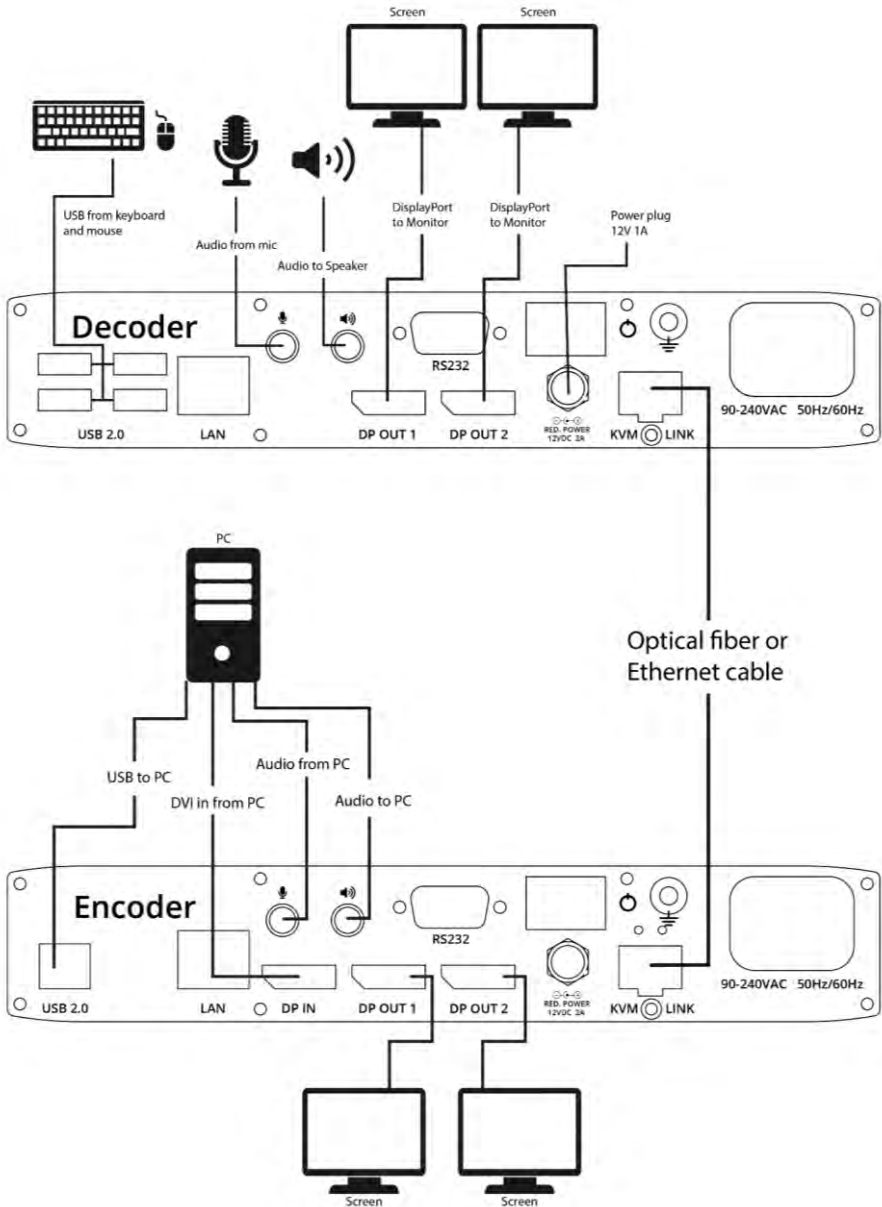
Extending a single PC

Connecting to multiple endpoints

Quick start

If you're setting up a network with multiple endpoints, for best results connect just a few Pathfinder devices at a time, and then add them to Pathfinder Control and update the firmware before you move on to the next set. This makes it much easier to find, name, and connect your devices.

Connecting your hardware

1. Connect the 90-240VAC port of the encoder and decoder to electrical outlets.

2. Connect the USB port on your PC to the USB 2.0 port of the encoder.

3. Connect a USB keyboard and mouse to the decoder.

4. Connect the PC video output to the DP IN port of the encoder.

5. Connect the encoder and the decoder with fiber optical or Ethernet cable.
   Or
   Connect all endpoints to a network switch. Ensure that all connections have a bandwidth of 10 Gbit/sec minimum.
   For video sharing the network switch must support IGMP snooping, and IGMP snooping must be switched on.

6. Connect the remote monitor or monitors to the decoder with a DisplayPort cable.

7. OPTIONAL: use a 3.5 mm jack to connect the 🔊 port of the encoder to a speaker, or to the mic port of your PC. Connect the 🎤 port of the encoder to the headphone port of your PC.

8. OPTIONAL: use a 3.5 mm jack to connect the 🔊 port of the decoder to a speaker. Connect the 🎤 port to a microphone.

9. Switch on your PC and monitors.

10. If you're using a network switch, connect the power supply to an electrical outlet.

11. Switch on the encoder and decoder.
    Your Pathfinder devices start.

Setting up your system in Pathfinder Control

> ❶ If your Pathfinder network includes a network switch, Pathfinder Control must run on your Pathfinder network at all times. You don't have to be logged in.
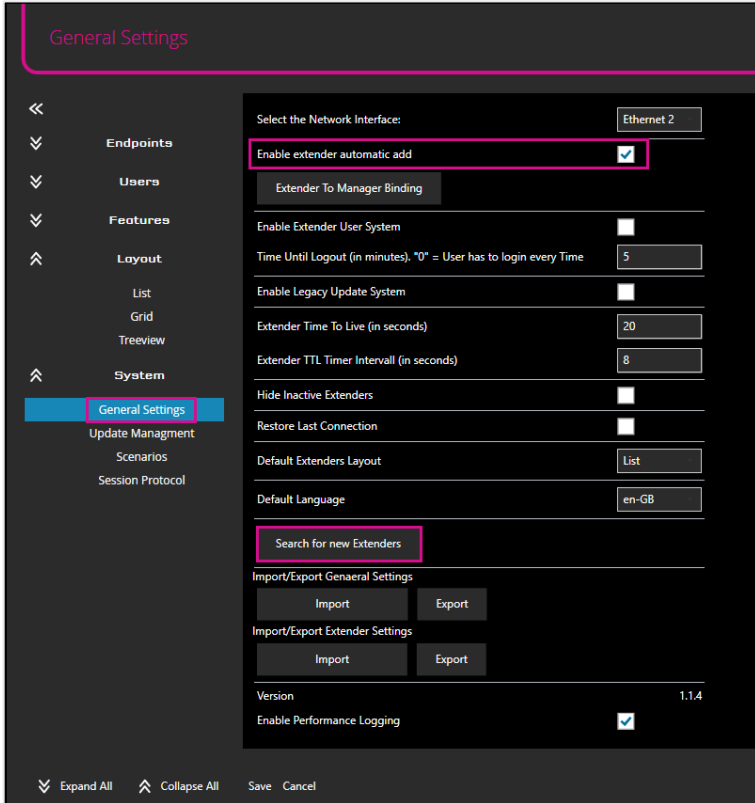
Use Pathfinder Control to set up your system and upgrade your firmware.

To set up your system in Pathfinder Control

> ❶ This task is for administrators.

1. Install Pathfinder Control on a dedicated PC connected to the Pathfinder network.
    Download Pathfinder Control from tvone.com/softwares.
2. Open Pathfinder Control and log in as an administrator. The default username is admin, and the default password is admin.
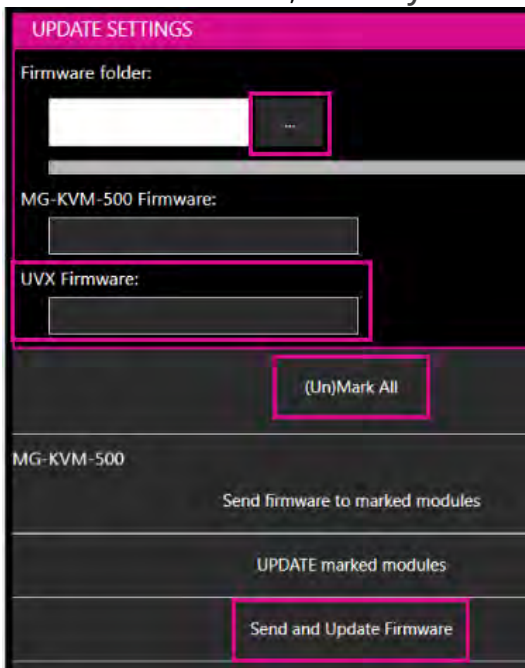
3. Select **General Settings**.

4. Make sure **Enable extender automatic add** is selected. If it isn't, select it, then save. Pathfinder Control closes. Open it again.
5. Select **Search for new Extenders**.
6. Select **Endpoints** > **Extender Settings**.
7. Double-click each extender and give it a name.

Updating your firmware

1. Download the latest firmware from tvone.com/softwares.
2. In Pathfinder Control, select **System** > **Update Management.**

3. In UPDATE SETTINGS, select ●●● and navigate to the firmware file you downloaded in step 1.
   The firmware .bmp file appears under **MG-KVM-800 Firmware**.
4. Select **(Un)Mark All** to select all the devices on your network.
5. Select **Send and Update Firmware**.
   Your devices update. When the firmware update is complete, **Finished!** appears under **Alerts**.
   If **Error! Try again!** appears, select the device or devices that did not update, and select **Send and Update Firmware**.

You can now add your next batch of devices. Start again from To set up your system in Pathfinder Control on page 11.

Connecting encoders and decoders in Pathfinder Control

This task is for systems with multiple endpoints only. If you're only extending a single PC, skip this task and go to Using the on-screen display on page 15.

1. Select Layout > List.
2. For the devices you want to connect, select the box in the Grid column. If you don't want to connect a device right now, clear the box in the Grid column.
3. Select Layout > Grid.
4. From Decoders, select a decoder. When the decoder turns green, select an encoder from Encoders. When the two devices are connected, they turn blue.

Next steps

Congratulations, your basic network is set up. You can now log on to and use your Pathfinder network with just the on-screen display. Read on for information about how users can log on to a PC and connect to an encoder.

You can also set up more sophisticated features in Pathfinder Control, such as device groups, Cross-Click, and WindowView. Read more about setting up extra features in the Pathfinder Control User Guide. There's a link at the back of this guide.

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Using the on-screen display

Opening the on-screen display

To open the on-screen display (OSD), press Scroll Lock (ScrLk) quickly five times.

> ✔ If your keyboard doesn't have a Scroll Lock key, open the on-screen keyboard.
> Select **Start** > **Settings** > **Ease of Access** > **Keyboard**.

Navigating in the on-screen display

Use the arrow keys to navigate. Use Enter to select, or press the key corresponding to the selection you want, as shown in the menu.
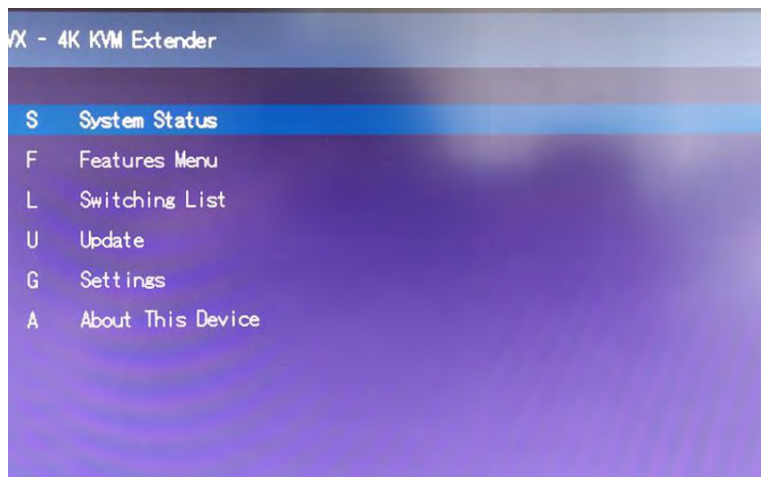
Closing the on-screen display

- Press Esc.

Logging in

The on-screen display of Pathfinder 800 series devices does not include a dedicated login menu. Instead, the network prompts you to log in when needed.

The **Home** menu
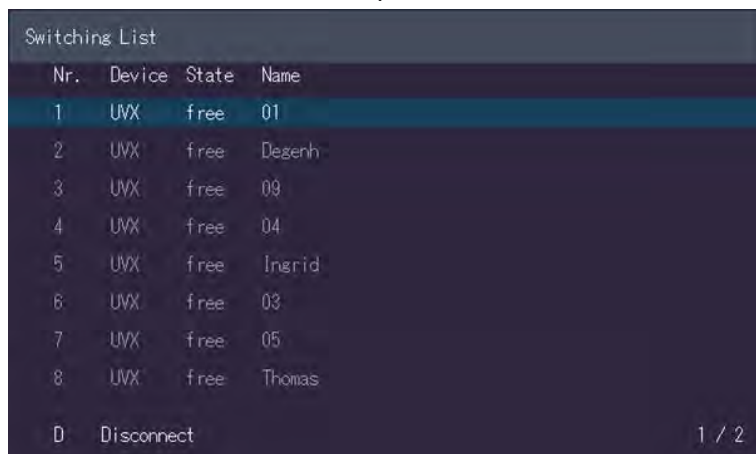
The **Home** menu includes a list of sub menus.

S	System status screen	View the status of your system and connection
F	Features menu	Manage the features of your Pathfinder network
L	Switching List	Connect to an encoder on your Pathfinder network
U	Update	We recommend you update your firmware with Pathfinder Control
G	Settings menu	Manage the settings of your Pathfinder network
A	About this device	View information about this Pathfinder device

Connecting, disconnecting, and switching encoders

You can quickly connect, disconnect, and switch between encoders. If you're viewing multiple PCs with WindowView, first move your mouse pointer to the area of your monitor where you want to make a change.

Connect, disconnect, and switch encoders in the **Switching List** menu. In the **Home** menu, press L.

- To connect or switch to an encoder, use the arrow keys to navigate to the encoder you want, and press Enter.
- To disconnect from an encoder, use the arrow keys to navigate to the encoder you want to disconnect from, and press D.

Connecting directly to an encoder with a point-to-point connection

If your decoder and encoder are linked directly, instead of through a network switch, you can open a point-to-point connection.

In the **Home** menu, press F > P.

Get more help

For more information, download our user guides at
help.tvone.com/products/mg/mg-kvm

Contact us

tvone.com

info@tvone.com

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