

Black Box EMD4000R

Black Box EMD4000R 4K DisplayPort KVM-over-IP Extender Receiver User Manual

Model: EMD4000R

1. INTRODUCTION

The Black Box EMD4000R is a 4K DisplayPort KVM-over-IP Extender Receiver designed to extend DisplayPort video, USB 2.0, and audio signals over a standard IP network. This device enables remote access to a computer or server from a user console, supporting high-resolution 4K video at 60Hz. It is part of a KVM-over-IP system, requiring a compatible transmitter unit (sold separately) for full functionality. This manual provides essential information for the proper installation, operation, and maintenance of your EMD4000R receiver.

2. PACKAGE CONTENTS

Verify that all items are present in your package. If any items are missing or damaged, please contact your supplier.

- EMD4000R KVM-over-IP Extender Receiver Unit
- Power Adapter
- Power Cord
- Remote Control (if applicable to specific model variant)
- Cables (specific to model, e.g., USB, DisplayPort)

3. PRODUCT OVERVIEW

The EMD4000R receiver features various ports for connectivity, allowing it to integrate into a KVM-over-IP system. Understanding the layout of these ports is crucial for correct installation.

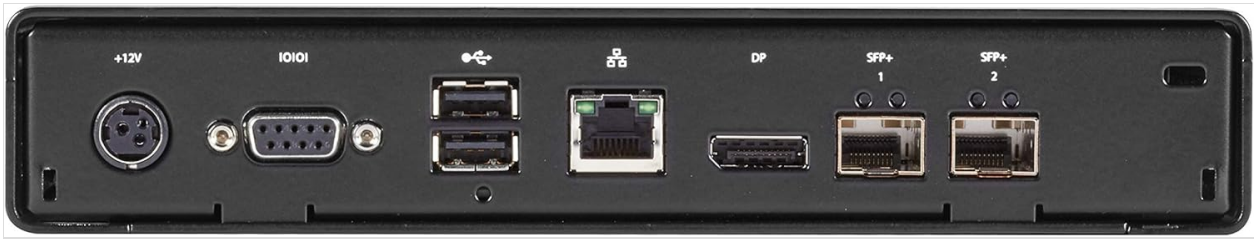


Figure 3.1: Rear Panel Connectors

This image displays the rear panel of the EMD4000R receiver. From left to right, it includes the +12V DC power input, I/O ports (likely for serial communication), multiple USB 2.0 ports, an Ethernet port, a DisplayPort output, and two SFP+ ports for network connectivity.



Figure 3.2: EMD4000R Unit and Accessories

This image shows the EMD4000R receiver unit alongside its power adapter and power cord, illustrating the complete package contents for the device.

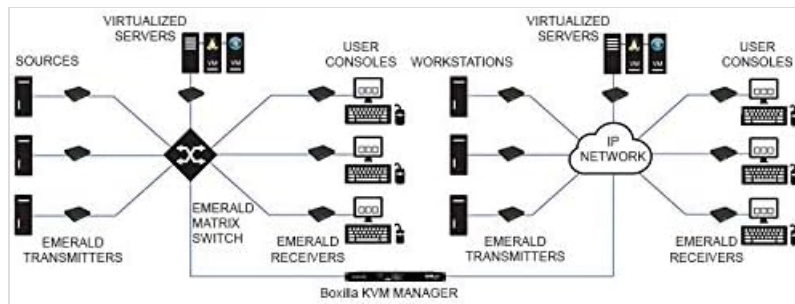


Figure 3.3: Typical KVM-over-IP System Diagram

This diagram illustrates a typical KVM-over-IP setup. It shows sources (servers) connected to Emerald Transmitters, which then connect to an Emerald Matrix Switch or directly to an IP Network. Emerald Receivers (like the EMD4000R) connect to the network and user consoles (workstations) with monitors, keyboards, and mice, enabling remote access to the sources.

4. SETUP

Follow these steps to set up your EMD4000R receiver:

1. **Power Connection:** Connect the provided power adapter to the +12V DC input on the rear panel of the EMD4000R receiver. Plug the power cord into a suitable power outlet.
2. **DisplayPort Connection:** Connect a DisplayPort cable from your monitor to the DisplayPort output on the rear panel of the EMD4000R. Ensure the cable is securely fastened.

3. **USB Device Connection:** Connect your USB keyboard, mouse, and any other USB 2.0 peripheral devices to the USB ports on the rear panel of the EMD4000R.
4. **Audio Connection (Optional):** If using external speakers or a microphone, connect them to the appropriate audio input/output jacks on the receiver (if available and supported by your specific model variant).
5. **Network Connection:** Connect an Ethernet cable from your network switch or router to the Ethernet port on the rear panel of the EMD4000R. Alternatively, if using SFP+ modules, insert them into the SFP+ ports and connect fiber optic cables to your network infrastructure.
6. **Power On:** Once all connections are made, power on the EMD4000R receiver. The device will initiate its boot sequence.
7. **Pairing with Transmitter:** Refer to the Black Box Emerald KVM Manager software or your system's documentation for instructions on how to pair the receiver with its corresponding transmitter unit over the IP network. This step is essential for establishing the KVM connection.

5. OPERATING INSTRUCTIONS

After successful setup and pairing, the EMD4000R receiver operates as follows:

- **Display Output:** The video signal from the remote computer (connected to the transmitter) will be displayed on the monitor connected to the EMD4000R receiver.
- **USB Control:** Your connected USB keyboard and mouse will control the remote computer as if they were directly connected.
- **Audio Transmission:** Audio signals from the remote computer will be output through the audio ports on the receiver, and microphone input (if connected) will be transmitted back to the remote computer.
- **System Management:** Use the Black Box Emerald KVM Manager software to manage connections, switch between sources (if multiple transmitters are used), and configure advanced settings.

6. MAINTENANCE

To ensure optimal performance and longevity of your EMD4000R receiver, follow these maintenance guidelines:

- **Cleaning:** Regularly clean the exterior of the unit with a soft, dry cloth. Avoid using liquid cleaners or aerosols, which can damage the device.
- **Ventilation:** Ensure that the ventilation openings on the unit are not blocked to prevent overheating. Maintain adequate airflow around the device.
- **Firmware Updates:** Periodically check the Black Box website for firmware updates. Keeping the firmware up-to-date can improve performance, add new features, and resolve potential issues.
- **Cable Management:** Ensure all cables are securely connected and neatly organized to prevent accidental disconnections or damage.

7. TROUBLESHOOTING

If you encounter issues with your EMD4000R receiver, refer to the following troubleshooting tips:

- **No Video Output:**
 - Check DisplayPort cable connections at both the receiver and the monitor.

- Ensure the monitor is powered on and set to the correct input source.
 - Verify that the receiver is properly paired with the transmitter and that the transmitter is receiving a video signal from the source computer.
 - Check network connectivity between the transmitter and receiver.
- **USB Devices Not Responding:**
 - Ensure USB devices are securely connected to the receiver's USB ports.
 - Test USB devices directly on the source computer to confirm functionality.
 - Verify that USB passthrough is enabled and configured correctly in the KVM management software.
- **No Audio:**
 - Check audio cable connections to speakers/headphones.
 - Ensure audio output is selected correctly on the remote computer.
 - Verify volume levels on both the remote computer and the connected audio devices.
- **Network Connectivity Issues:**
 - Check Ethernet or SFP+ cable connections.
 - Verify network switch/router status and configuration.
 - Ensure IP addresses are correctly assigned and there are no conflicts.
- **Device Not Powering On:**
 - Confirm the power adapter is securely connected to the receiver and a working power outlet.
 - Test the power outlet with another device.

If problems persist, consult the Black Box support website or contact technical support.

8. SPECIFICATIONS

Brand	Black Box
Model Number	EMD4000R
Connectivity Technology	DisplayPort, Ethernet
Video Output Resolution	4K
Supported Standards	4K60 DisplayPort, USB 2.0, MP3, MP4, WAV
Audio Output Mode	Stereo
Compatible Devices	Laptop, Personal Computer, Television
Total HDMI Ports	1 (Note: Product description indicates DisplayPort, this may refer to a DisplayPort to HDMI adapter capability or a generic port count)
Number of Component Outputs	1
Aspect Ratio	16:9
Color	Black

UPC	822088136620
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9. WARRANTY AND SUPPORT

Black Box Network Services products are designed for reliability and performance. For specific warranty information regarding your EMD4000R, please refer to the warranty card included with your product or visit the official Black Box website.

For technical support, product documentation, or to register your product, please visit the Black Box support portal or contact their customer service directly. Contact information can typically be found on the Black Box official website:

Black Box Official Website: www.blackbox.com

When contacting support, please have your product model number (EMD4000R) and serial number ready.