

StarTech FD121-KVM-EXTENDER

StarTech.com FD121-KVM-EXTENDER DisplayPort KVM Extender Over Fiber Optic User Manual

Model: FD121-KVM-EXTENDER

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the StarTech.com FD121-KVM-EXTENDER DisplayPort KVM Extender Over Fiber Optic. This device allows you to extend a 4K 60Hz DisplayPort video signal and USB KVM control over a fiber optic cable, enabling remote access to a KVM switch, console, or PC from distances up to 984 feet (300 meters) using multi-mode fiber.

2. PRODUCT OVERVIEW

2.1 Package Contents

- 1x KVM Extender Transmitter Unit
- 1x KVM Extender Receiver Unit
- 2x SFP+ Modules (pre-installed)
- 2x USB-A to Micro-B Cables
- 2x Universal Power Adapters (NA/EU/UK/AU)
- 1x Instruction Manual (this document)



Image: All components included with the StarTech.com FD121-KVM-EXTENDER KVM Extender kit.

2.2 Features

- Extends 4K 60Hz DisplayPort video and USB KVM control up to 984ft (300m) over multi-mode fiber optic cable.
- Supports UHD resolutions up to 3840x2160 at 60Hz (4:4:4).
- DP 1.2 compliant with EDID pass-through for optimal display compatibility.
- Three USB HID ports on the receiver for connecting peripherals (mouse, keyboard, etc.).
- Point-to-point fiber connection requires no drivers or software.
- Compatible with all major operating systems (Windows, macOS, Linux).
- Durable steel chassis designed to reduce electromagnetic interference (EMI).

- SFP+ slots support MSA-compliant modules for both multi-mode and single-mode fiber (single-mode modules sold separately).

2.3 Component Identification



Image: Rear view of the KVM Extender Transmitter (left) and Receiver (right) units, highlighting the Power, Link, Monitor, and Host (HID) ports.



Image: Front view of the KVM Extender units, showing the USB HID ports on the receiver unit.

The KVM Extender consists of two main units: a Transmitter and a Receiver. Each unit features:

- **Power Input:** Micro-B USB port for connecting the power adapter.
- **Link Port:** SFP+ slot for fiber optic cable connection.
- **Monitor Port:** DisplayPort input on the Transmitter, DisplayPort output on the Receiver.
- **Host (HID) Port (Transmitter):** USB-B port for connecting to the source computer/KVM switch.
- **HID Ports (Receiver):** USB-A ports for connecting KVM peripherals (keyboard, mouse).
- **Status LED:** Indicates power and link status.

- **HID LED:** Indicates USB HID activity.

3. SETUP INSTRUCTIONS

Follow these steps to set up your StarTech.com KVM Extender:

1. **Power Off Devices:** Ensure all devices (source computer, KVM switch, display) are powered off before beginning installation.
2. **Connect Transmitter to Source:**
 - Connect a DisplayPort cable from your source computer or KVM switch to the **Monitor (Input)** port on the KVM Extender Transmitter unit.
 - Connect the provided USB-A to Micro-B cable from a USB-A port on your source computer or KVM switch to the **Host (HID)** port on the KVM Extender Transmitter unit.
3. **Connect Receiver to Console:**
 - Connect a DisplayPort cable from the **Monitor (Output)** port on the KVM Extender Receiver unit to your display.
 - Connect your USB keyboard, mouse, or other HID peripherals to the **HID** USB-A ports on the KVM Extender Receiver unit.
4. **Connect Fiber Optic Cable:**
 - Insert the pre-installed SFP+ modules into the **Link** ports on both the Transmitter and Receiver units.
 - Connect a multi-mode fiber optic cable (not included) between the **Link** port on the Transmitter and the **Link** port on the Receiver. Ensure the fiber cable is securely connected.



Image: The KVM Extender Transmitter and Receiver units with SFP+ modules inserted into their respective Link ports.

5. **Apply Power:** Connect the provided power adapters to the **Power** input ports on both the Transmitter and Receiver units, then plug the adapters into power outlets.

6. **Power On Devices:** Power on your display, then your source computer or KVM switch. The Status LEDs on both extender units should illuminate, indicating a successful connection.

4. OPERATING INSTRUCTIONS

Once the setup is complete, the KVM Extender operates automatically:

- The DisplayPort video signal from your source will be extended to your remote display.
- Your connected USB keyboard and mouse will control the source computer or KVM switch as if they were directly connected.
- The EDID pass-through feature ensures that your display's optimal resolution and refresh rate are communicated to the source device.
- No additional software or drivers are required for operation.

5. MAINTENANCE

To ensure the longevity and optimal performance of your KVM Extender:

- Keep the units in a clean, dust-free environment.
- Clean the exterior with a soft, dry cloth. Do not use liquid cleaners or solvents.
- Ensure proper ventilation around both units to prevent overheating.
- Regularly check all cable connections to ensure they are secure.

6. TROUBLESHOOTING

If you encounter issues with your KVM Extender, refer to the following common troubleshooting steps:

6.1 No Video Display

- **Check Power:** Ensure both the Transmitter and Receiver units are powered on and their Status LEDs are illuminated.
- **Verify Cable Connections:** Confirm that all DisplayPort and fiber optic cables are securely connected to their respective ports on both units and connected devices.
- **Fiber Optic Link:** Ensure the fiber optic cable is not damaged and is correctly connected between the Transmitter and Receiver. The Link LED should be active.
- **Display Compatibility:** Verify your display supports the resolution and refresh rate output by the source device.
- **Source Output:** Test the source device directly with the display to ensure it is outputting a signal.

6.2 No KVM Control (Keyboard/Mouse Not Responding)

- **Check USB Connections:** Ensure the USB-A to Micro-B cable is securely connected from the source to the Transmitter's Host (HID) port, and your peripherals are connected to the Receiver's HID ports.
- **Peripheral Compatibility:** Confirm your keyboard and mouse are standard HID-compliant devices.
- **Fiber Optic Link:** A stable fiber optic link is required for KVM control. Ensure the link is active.
- **Reboot:** Try restarting the source computer and then the KVM Extender units.

6.3 Intermittent Signal

- **Cable Quality:** Use high-quality DisplayPort and fiber optic cables.
- **Cable Length:** Ensure the fiber optic cable length does not exceed the maximum supported distance (984ft/300m for multi-mode).
- **EMI:** While the units are designed to reduce EMI, ensure they are not placed near strong sources of electromagnetic interference.
- **Power Stability:** Ensure both units are receiving stable power.

7. SPECIFICATIONS

Attribute	Value
Brand	StarTech
Model Number	FD121-KVM-EXTENDER
Connector Type	DisplayPort
Connectivity Protocol	Fiber Optic
Max Resolution	3840x2160 @ 60Hz (4K 60Hz)
Max Distance (Multi-Mode)	984ft (300m)
Max Distance (Single-Mode)	1,640ft (500m) (with optional SFP+ modules)
Video Standard	DisplayPort 1.2
USB Support	USB HID (Keyboard, Mouse)
Operating System Compatibility	OS Independent (Windows, macOS, Linux)
Dimensions (L x W x H)	4.5 x 3.1 x 1.1 inches (11.4 x 7.9 x 2.8 cm)
Item Weight	1.16 pounds (0.53 kg)
Housing Material	Steel
TAA Compliant	Yes

8. SAFETY INFORMATION

Please read and follow these safety guidelines to prevent damage to the product or injury to yourself:

StarTech.com

Warnings/Warnungen/Avertissements/
Avvertenze/Advertencias/Waarschuwingen/警告



Electrical Hazards:

Do not use damaged or frayed cables. Exposed wires can lead to electric shocks, short circuits, or fires. Always ensure cables are properly insulated and connected.

Elektrische Gefahren:

Verwenden Sie keine beschädigten oder ausgefranzten Kabel. Freiliegende Drähte können zu Stromschlägen, Kurzschlüssen oder Bränden führen. Achten Sie immer darauf, dass die Kabel ordnungsgemäß isoliert und angeschlossen sind.

Beachten Sie:

Die Kabel müssen ordnungsgemäß isoliert und angeschlossen sein.

risques électriques:

Ne pas utiliser de câbles endommagés ou effilochés. Les fils exposés peuvent provoquer des chocs électriques, des courts-circuits ou des incendies. Veillez toujours à ce que les câbles soient correctement isolés et raccordés.

Pericoli elettrici:

Non utilizzare cavi danneggiati o sfilacciati. I cavi esposti possono provocare scosse elettriche, cortocircuiti o incendi. Assicurarsi sempre che i cavi siano isolati e collegati correttamente.

Peligros con la Electricidad:

No utilice cables dañados o deshilachados. Los cables expuestos pueden provocar descargas eléctricas, cortocircuitos o incendios. Asegúrese siempre de que los cables estén correctamente aislados y conectados.

Elektrische Gevaren:

Gebruik geen beschadigde of gerafelde kabels. Blootliggende draden kunnen leiden tot elektrische schokken, kortsluiting of brand. Zorg er altijd voor dat kabels goed geïsoleerd en aangesloten zijn.

電気の危険:

傷んだケーブルやほつれたケーブルを使用しないでください。配線が露出していると、感電、ショート、火災の原因となります。ケーブルが適切に絶縁され、接続されていることを常に確認してください。

**Heat Buildup:**

Overloaded or tightly bundled cables can overheat and pose a fire hazard. Ensure proper ventilation and avoid bundling power cables.

Wärmestau:

Überlastete oder eng gebündelte Kabel können überhitzen und eine Brandgefahr darstellen. Sorgen Sie für eine ausreichende Belüftung und vermeiden Sie das Bündeln von Stromkabeln.

Accumulation de chaleur:

Les câbles surchargés ou en faisceau serré peuvent surchauffer et présenter un risque d'incendie. Veillez à une bonne ventilation et évitez de regrouper les câbles d'alimentation.

Accumulo di calore:

I cavi sovraccarichi o strettamente raggruppati possono surriscaldarsi e costituire un rischio di incendio. Assicurare una ventilazione adeguata ed evitare di raggruppare i cavi di alimentazione.

Acumulación de Calor:

Los cables sobrecargados o muy liados pueden sobrecalentarse y suponer un riesgo de incendio. Garantice una ventilación adecuada y evite agrupar los cables de alimentación.

Warmteontwikkeling:

Overbelaste of strak gebundelde kabels kunnen oververhit raken en brand veroorzaken. Zorg voor goede ventilatie en vermijd het bundelen van voedingskabels.

熱の蓄積:

過負荷やきつく束ねられたケーブルは過熱し、火災の原因となることがあります。適切な換気を行い、電源ケーブルを束ねないようにしてください。

**Damage:**

Always unplug adapters by holding the plug, not the cable. Pulling by the cable can expose live wires, which could lead to electrical shocks or burns.

Beschädigung:

Ziehen Sie Adapter immer am Stecker aus der Steckdose, nicht am Kabel. Wenn Sie am Kabel ziehen, können stromführende Drähte freigelegt werden, was zu Stromschlägen oder Verbrennungen führen kann.

Dommages:

Débranchez toujours les adaptateurs en tenant la fiche et non le câble. Tirer sur le câble peut exposer des fils sous tension, ce qui peut entraîner des chocs électriques ou des brûlures.

Danni:

Scollegare sempre gli adattatori tenendo la spina, non il cavo. Tirando il cavo si possono esporre i fili sotto tensione, con il rischio di scosse elettriche o ustioni.

Daños:

Siempre desenchufe siempre los adaptadores sujetando el enchufe, no el cable. Si tira del cable, pueden quedar al descubierto alambres con corriente, lo que podría provocar descargas eléctricas o quemaduras.

Schade:

Haal adapters altijd uit het stopcontact door de stekker vast te houden, niet de kabel. Als u aan de kabel trekt, kunnen stroomdraden bloot komen te liggen, wat kan leiden tot elektrische schokken of brandwonden.

損傷:

アダプタのプラグを抜くときは、ケーブルではなく必ずプラグを持って抜いてください。ケーブルを持って引っ張ると、感電や火傷の原因となります。

- **Electrical Hazards:** Do not use damaged or frayed cables. Exposed wires can lead to electric shocks. Ensure all cables are properly routed and connected to prevent hazards.
- **Heat Buildup:** Overloaded or tightly bundled cables can overheat and pose a fire hazard. Ensure adequate ventilation around the units and avoid bundling power cables tightly.
- **Damage Prevention:** Always unplug power adapters by holding the plug itself, not by pulling the cable. Pulling by the cable can damage the internal wiring and expose live wires, leading to electrical shocks or burns.

9. WARRANTY AND SUPPORT

This StarTech.com product is backed by a 2-year warranty. Additionally, free lifetime 24/5 multi-lingual technical assistance is available.

For product support, technical assistance, or to access the latest drivers and manuals, please visit the official StarTech.com website or contact their support team:

- **Website:** www.startech.com/support
- **Contact Information:** Refer to the support section of the StarTech.com website for regional contact details.