

### 1 Introduction

The Crestron® USB over Twisted Pair Extender (USB-EXT) delivers USB signal extension for use in various commercial and residential applications. The USB-EXT enables wire runs up to roughly 300 ft (100 m) over a single twisted-pair cable without requiring any specialized installation.

The USB-EXT is compatible with USB 1.1 and High-Speed USB 2.0, and it supports almost any USB device, including keyboards and mice, game controllers, cameras, mobile devices, printers, switches, and memory devices. Additionally, it is compatible with Windows® and macOS™ software without needing to install any additional drivers.

**NOTE:** Crestron does not guarantee that the USB-EXT is compatible with all USB devices.

The USB-EXT is composed of two extender components. The “local” extender connects to a computer or other USB host, while the “remote” extender provides connections for USB devices at some remote location. Linking the two extender components requires only one run of CAT5 (or better) twisted-pair cable.

The USB-EXT contains a local extender, a remote extender, a power supply, and a USB cable.



**CAUTION:** The ambient operating temperature is 32° to 122 °F (0° to 50 °C). The extenders may be hot to the touch when operating at or near the high end of this temperature range.

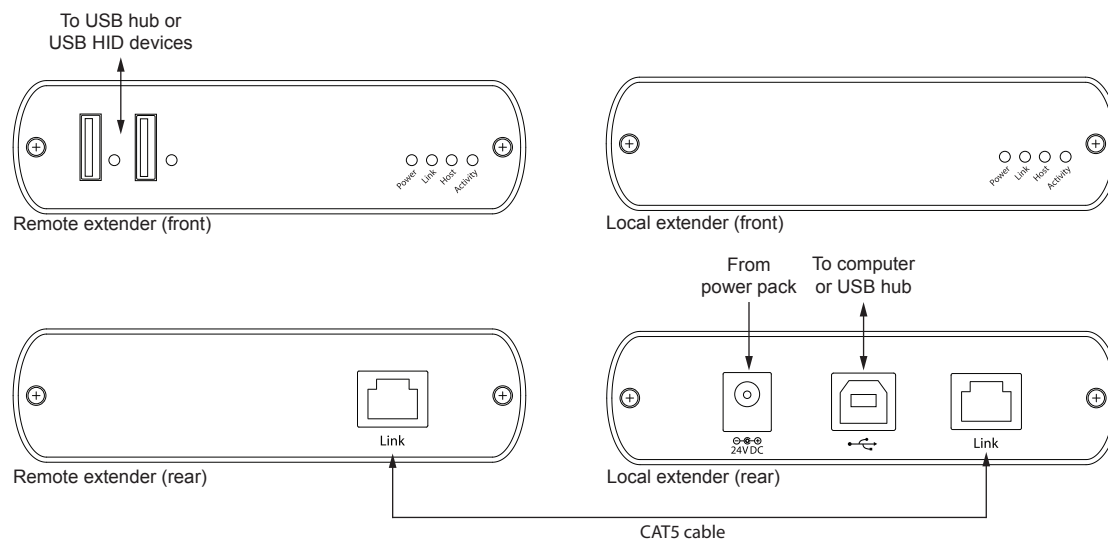
### 2 Mounting

After determining where the local computer and the remote USB device(s) are to be located, place the local and remote boxes of the USB-EXT on a flat surface near each of the two locations. The rubber feet help ensure that the units do not shift.

### 3 Installing

1. Insert one end of the supplied USB cable into the local extender and the other end into a USB Type A port on the computer.
2. Using CAT5 (or better) cable, connect the Link ports of the local and remote extenders. Do not connect the Link ports to an Ethernet LAN or to any other network device.
3. Plug the power adapter into the local extender, and then plug the 24 V power adapter into an AC outlet.

**NOTE:** If using preinstalled in-wall CAT5 wiring, plug one end of the CAT5 patch cable (not supplied) into the Link port on the local extender, and plug the other end of the patch cord into the wall outlet near the host computer. Plug one end of the second CAT5 patch cord (not supplied) into the Link port on the remote extender, and plug the other end of the second patch cable into the wall outlet near the USB device. Ensure that the two patch cables and the in-wall cabling do not exceed ~330 ft (100 m).



### 4 Connecting a USB Device

1. Install any software on the computer that is required to operate the USB device(s). Refer to the documentation for the USB device(s) for installation instructions.
2. Connect the USB device to either USB port on the front of the remote extender.
3. Check that the device is installed and that it is detected properly by the operating system.

### 5 Checking the Installation

On the local and the remote units, check that the Power, Host, and Link LEDs are on and that the Activity LED for the connected USB port is blinking. If any LED does not light, then the cabling between the local and remote units is not properly installed or is defective.

Verify that the device is properly installed on the computer.

#### For Windows:

Open **Device Manager**, and then expand the entry for Universal Serial Bus controllers. If the USB-EXT has been properly installed, it is listed as a “Generic USB Hub.”

#### For macOS:

Open **System Profiler**. In the left-hand column under **Hardware**, select **USB**, and then inspect the right-hand panel. If the USB-EXT has been properly installed, it is listed as a “Hub” under the USB High-Speed Bus/USB Bus.

If the unit is not detected correctly or fails to detect, consult the Troubleshooting section on the following page.

### 6 Troubleshooting

The following table provides corrective actions for possible issues that may arise. If further assistance is required, please contact a Crestron customer service representative.

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
No LEDs illuminate on the local extender.	The local extender is not receiving power from the AC power adapter.	Ensure that the AC power adapter is properly connected to the local extender. Check that the AC adapter is connected to a live power source.
No LEDs illuminate on the remote extender.	The remote extender is not receiving power over the CAT5 cable.	Ensure that the CAT5 cabling between the local and the remote extender is properly installed. Verify the power pack connection to the local extender. Check that the local and the remote extender's Power LEDs are both illuminated.
The Link LEDs on the local extender and on the remote extender are off.	There is no connection between the local and remote extenders.	Ensure that the CAT5 cable is connected between the local and remote extenders and that CAT5 cable (or better), UTP with a straight-through connector and no crossovers, and eight RJ-45 connectors are used at both ends.
	The CAT5 cable is defective.	To determine if the CAT5 cable is defective, connect a short CAT5 patch cord between the two units.
The Link LEDs on the local extender are illuminated, but the Host LED is off.	The host computer is not powered on.	Power on the host computer.
	The local extender is not connected to the computer.	Check that the local extender is properly connected to the computer.
	The computer does not support USB hubs.	Connect the USB-EXT to a computer that supports USB hubs.
	The USB-EXT is malfunctioning.	Complete the following procedure: <ol style="list-style-type: none"> <li>1. Disconnect power to the local extender.</li> <li>2. Disconnect all USB devices from the remote extender.</li> <li>3. Disconnect the local extender from the computer.</li> <li>4. Reconnect the local extender to the computer.</li> <li>5. Reapply power to the local extender</li> <li>6. On a computer using Windows software, ensure that the device is recognized as a "Generic USB Hub" in the Universal Serial Bus section of <b>Device Manager</b>.</li> </ol>
There is a loss of functionality due to electrostatic discharge.	The unit is improperly grounded.	Check that all ground connections have been properly made.
The USB-EXT has been working, but the Host LEDs on the local and the remote extenders are now blinking.	The remote unit is in suspend mode. The operating system may put the USB-EXT in suspend mode when a computer is put into a suspend/standby state.	Recover/resume the operating system from suspend/standby mode.
	No USB devices are attached.	Attach a USB device to the USB-EXT.
All LEDs on both the local extender and the remote extender are on, but the USB device does not operate correctly, or it is detected as an "Unknown Device" in the operating system.	The USB device is malfunctioning.	Perform either of the following: <ul style="list-style-type: none"> <li>• Disconnect the USB-EXT from the computer and connect it directly to the USB port on the computer. If the device does not operate properly, consult the user documentation for the device for further troubleshooting.</li> <li>• If the device operates properly when directly connected to the computer, connect another device (of a different type) to the USB-EXT. If the second device does operate properly, the first device may not be compatible with the USB-EXT.</li> </ul> If the above steps do not solve the issue, update the system BIOS (basic input/output system), chipset, or USB host controller drivers from the system/motherboard manufacturer's website.
	The computer does not recognize the USB device. The application software for the device is not operating. The USB-EXT is malfunctioning.	
The USB device is attached to either of the remote USB ports, but the associated USB LED is off.	A USB device does not have the appropriate driver installed on the computer.	Install the USB driver on the computer prior to attaching the USB device to the remote extender. Refer to the USB device manufacturer's website for details.
The USB LED on the remote extender is orange, and the device is not functioning.	An overcurrent condition has occurred because the USB device drew more power than can be supplied per USB specification (500 mA).	Cycle the power of the local extender.
The Host and Link LEDs on the local and the remote extender blink intermittently.	There is a firmware mismatch between the local and the remote extenders.	Use a different local/remote pair that have the same firmware version. Check the Crestron FTP site for the latest firmware versions.

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