

# **USB 2.0 UT2304S-LAN Network Series**

4-Port USB 2.0 Gigabit Ethernet LAN  
Extender Systems

## **User Guide**



**Introduction**

UT2304S LAN Product Contents ..... 3-5

Features ..... 3-5

The Local Extender ..... 3-5

The Remote Extender ..... 3-5

**Installation Guide:**

Installing the UT2304S System on a Local Area Network ..... 6

Requirements ..... 6

Preparing your Network ..... 6

Preparing Your Site ..... 6

Installing the Local Extender ..... 8

Installing the Remote Extender ..... 8

Installing the UT2304S System as Direct Connect ..... 9

Requirements ..... 9

Preparing Your Site ..... 9

Installing the Local Extender ..... 10

Connecting the Local Extender to the Remote Extender ..... 10-11

Installing the Remote Extender ..... 12

Checking the Installation ..... 12

Connecting a USB Device ..... 12

Pairing the Local and Remote Extender ..... 12

Unpairing an Extender ..... 12

Compatibility ..... 14

Troubleshooting ..... 14

Specifications ..... 15

Statements & Contact ..... 16

## Introduction

This guide provides product information about the USB 2.0 UT2304S - LAN, along with installation instructions and troubleshooting guidelines. The instructions in this guide assume a general knowledge of computer installation procedures, familiarity with cabling requirements and some understanding of USB devices.

### NOTE!

Notes provide additional information that could be useful. CAUTION: Cautions provide important information about an operational requirement.

## UT2304S - LAN - Product Contents

- Local Extender
- Remote Extender
- USB 2.0 Cable
- Remote Extender AC International Power Adapter
- Country Specific Power Cable
- Quick Start Guide

### NOTE!

The UT2304S - LAN model ships in bulk only, not as a kitted system.

## Features

The UT2304S - LAN Series incorporates ExtremeUSB® technology, enabling users to extend USB beyond the standard 5m cable limit for USB 2.0 peripheral devices. This extender system is composed of two individual units: the Local Extender and the Remote Extender and has the following key features:

- 100m of over extension when directly connected over CAT 5e/6/7
- USB extension over a Gigabit Ethernet Local Area Network ( LAN )
- Support for new USB 3.0 host controllers and devices
- Support for all USB devices types

The UT2304S - LAN Series includes the Extreme USB® suite of features :

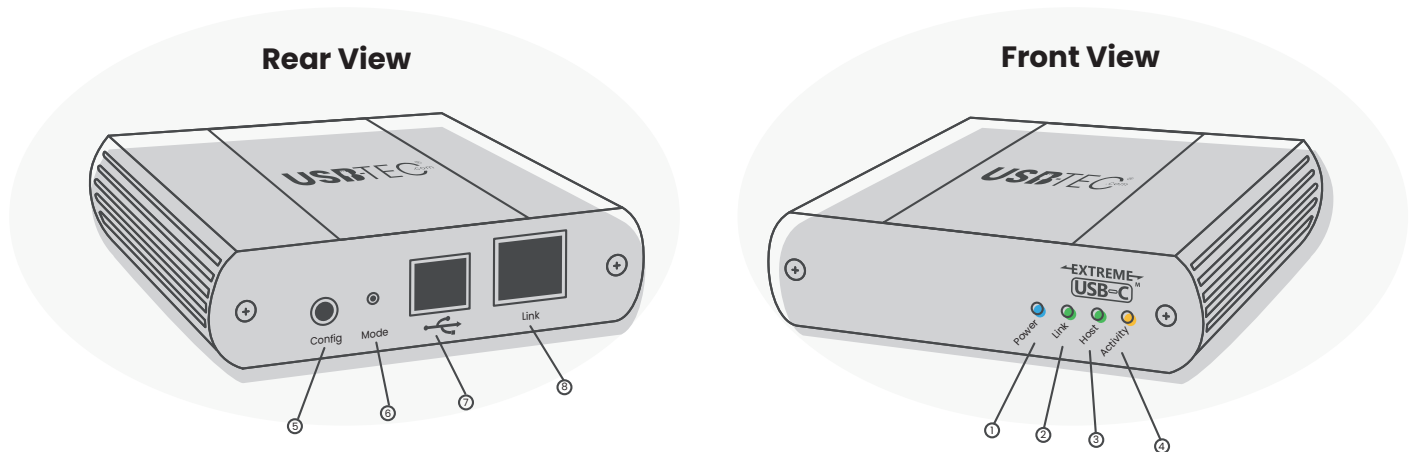
- Transparent USB extension
- True plug and play; no software drivers required
- Works with all major operating systems: Windows®, macOS

### NOTE!

USB 3.0 devices will perform at USB 2.0 speeds if extended through the RG2304 Series extender.

## The Local Extender

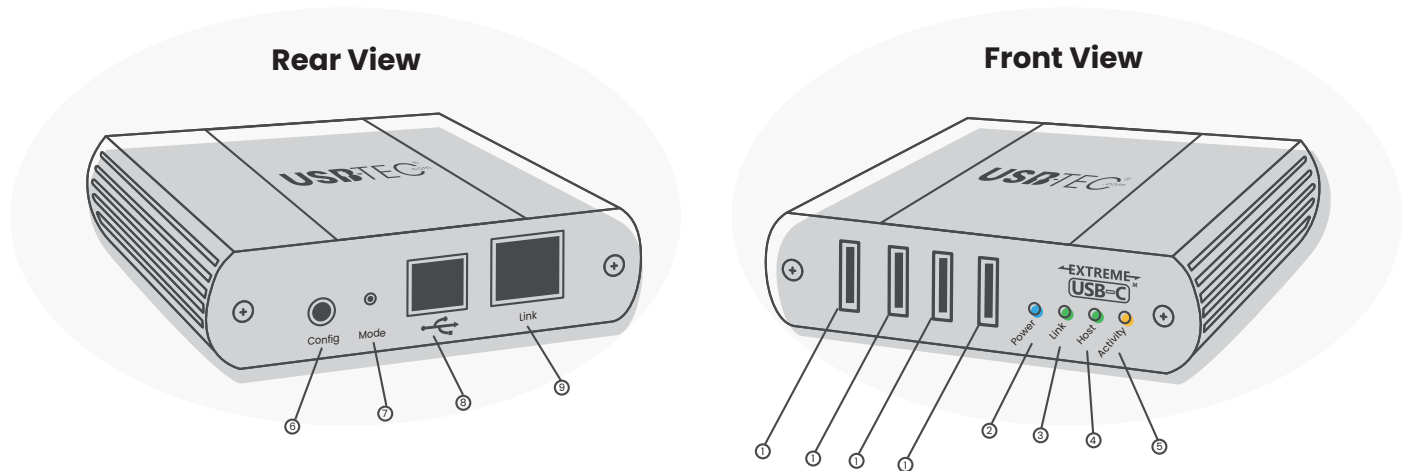
The local extender unit connects to the computer using a standard USB 2.0 cable. Power for this unit is provided by the host computer.



ITEM	TYPE	DESCRIPTION
1	Power LED (Blue)	LED turns on when power is supplied. LED is off when no power is supplied by the host computer.
2	Link LED (Green)	Indicates a valid ExtremeUSB link is established between the local and remote LED turns on when link between local and remote extender is established.LED is off when there is no link between local and remote extenders. LED is slow blinking when the unit is attempting to establish a link.LED is fast blinking to indicate the unit is in Pairing Mode.
3	Host LED (Green)	Indicates that the extender system is properly enumerated on the host computer. The LED blinks when the extender is in a suspended state.
4	Activity LED (Amber)	Indicates data transmission is occurring between local and remote extenders. LED blinks intermittently with or without a USB device connected. When the local and remote extenders are in suspend mode, the LED is off.
5	Config	Reserved for manufacturer use.
6	Mode	Used to establish a paired connection between local and remote extenders.
7	USB Host Port	Used to connect the local extender to the host computer. Accepts Type B connector into the local extender.
8	Link Port (RJ45)	Accepts RJ45 connector for CAT 5e/6/7 cabling to connect the local extender to the remote extender unit.

## The Remote Extender

The Remote Extender provides USB Type A ports for standard USB devices, and allows you to connect up to four USB devices directly. Additional devices may be connected by attaching USB hubs to the Remote Extender. The Remote Extender is powered by an external AC adapter and can supply up to 600ma to each USB port.



ITEM	TYPE	DESCRIPTION
1	USB Device Ports	Accepts USB device(s) using Type A connectors.
2	Power LED (Blue)	LED turns on when power is supplied, off when no power is supplied
3	Link LED (Green)	Indicates a valid USB link is established between the Local and Remote units. The LED turns on when a link between Local and Remote Extender is established and turns off when there is no link. Fast blinking indicates the unit is in "Pairing Mode" while slow blinking indicates the unit is attempting to establish a link.
4	Host LED (Green)	Indicates that the extender is properly connected to the host computer. The LED blinks when the extender is in a suspended state.
5	Activity LED (Amber)	Indicates data transmission is occurring between the Local and Remote units. The LED blinks intermittently with or without a USB device connected. When the Local and Remote Extender are in suspend mode the LED is off.
6	Power Port	Connects to the AC power supply. Required at the Remote Extender for proper operation.
7	Pair	Used to establish a paired connection between Local and Remote Extenders.
8	Link Port (RJ45)	Accepts a RJ45 connector for Cat 5e (or better) cabling to connect the Local Extender to the Remote Extender.
9	Config	Reserved.

## Installation

### Installing the UT2304S - LAN on a Local Area Network (**Network Connect**)

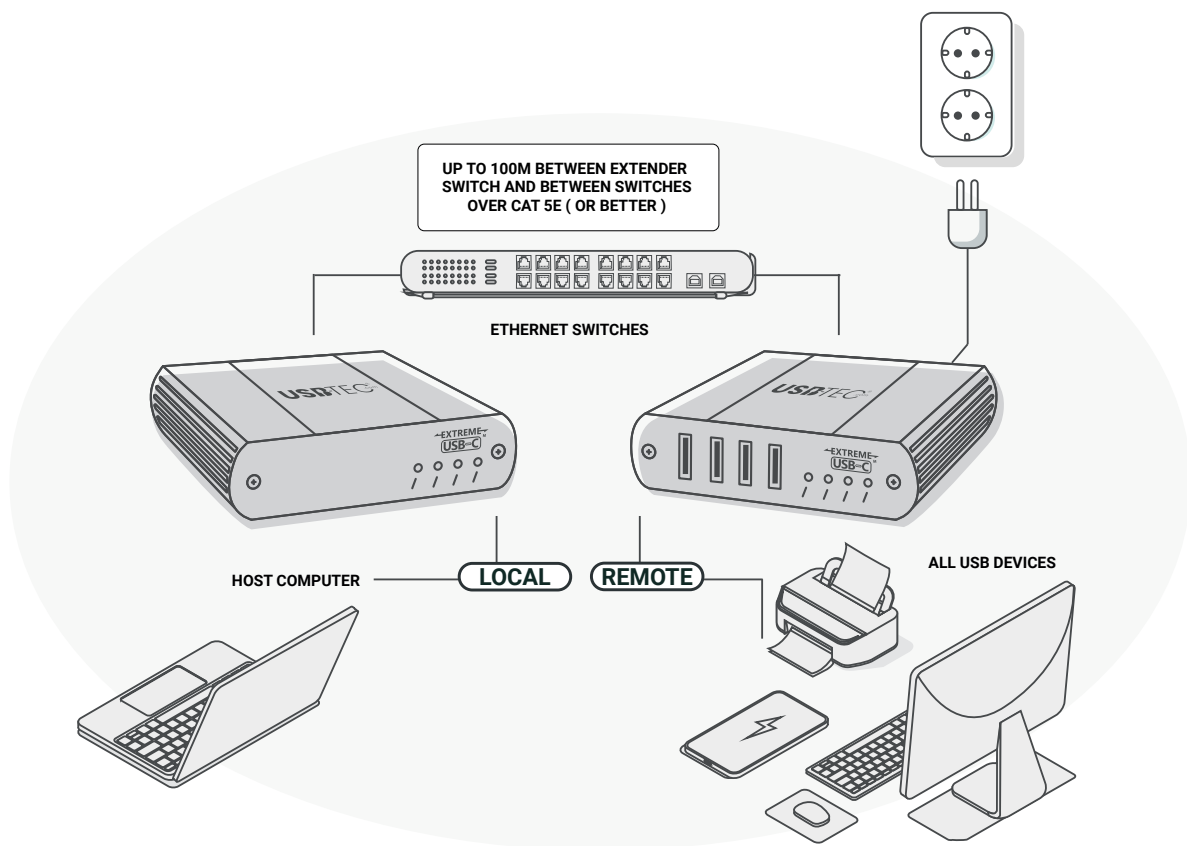
#### NOTE!

Units will be pre-paired with each other out of the box. If they are not paired, follow the instructions provided in the section for Pairing a Local and Remote Extender on Page 5.

### Requirements

o complete the installation, you will also require the following items that are not included with the product:

- USB compatible computer (host computer) with a USB compliant operating system
- USB compatible device(s)
- Two Cat 5e (or better) Ethernet cables
- Pre-installed and configured Local Area Network



### Preparing Your Network

for maximum stability and reliability of your devices, consult with your network administrator prior to installation. Using the UT2304S - LAN over a network requires:

**NOTE!**

Some networks may be configured to block device with unfamiliar MAC address. If this is the case, you will need to provide your network administrator the MAC Addresses of the Local and Remote Extender units. These can be found on the label on the bottom of each unit.

## Preparing Your Site

Before you can install the USB 2.0 UT2304S - LAN, you need to prepare your site:

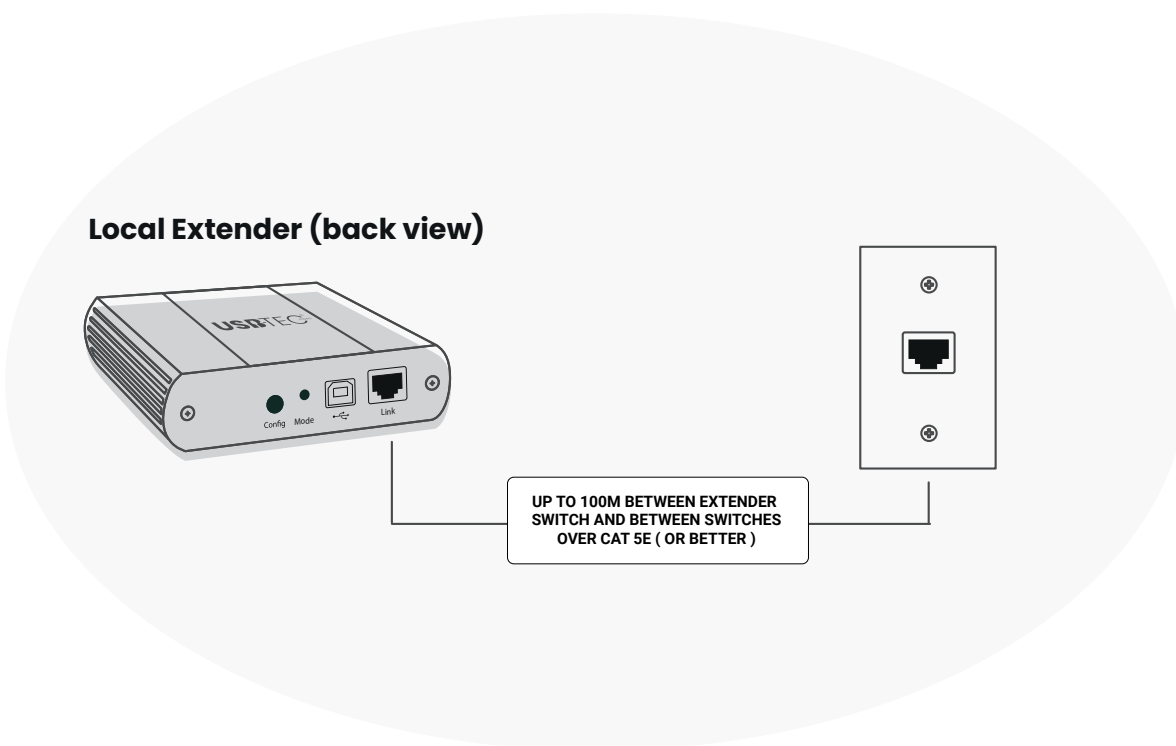
1. Place the computer where desired and set it up.
2. Ensure that where you want to locate the USB device(s) is within 100m (330ft) of the switch.
3. Ensure that where you want to locate the computer is within 100m (330ft) of the switch

**NOTE!**

The cable distance between switches must be no greater than 100m (330ft).

## Installing the Local Extender

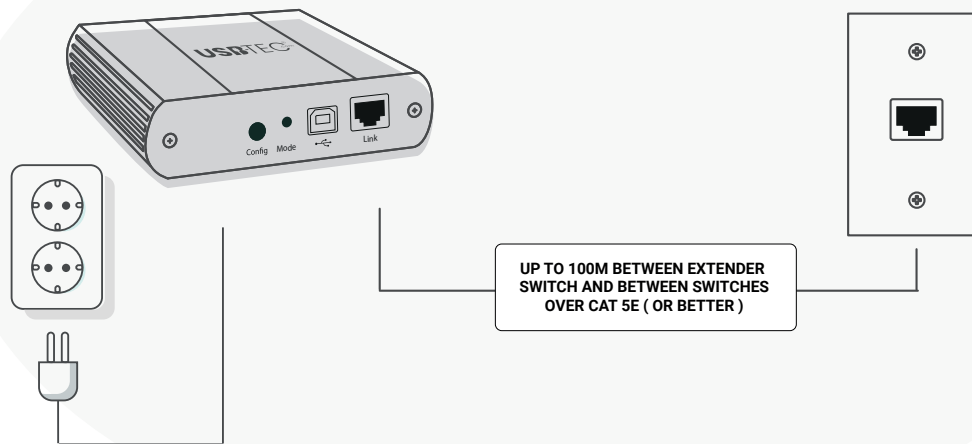
1. Place the Local Extender near the computer.
2. Connect the provided USB cable between the Local Extender host port and a USB port on the host computer.
3. Connect a Cat 5e (or better) cable (not provided) into to a network switch or wall network port connected to a switch.
4. Connect the opposite end of the Ethernet cable into the Link port of the Local Extender



## Installing the Remote Extender

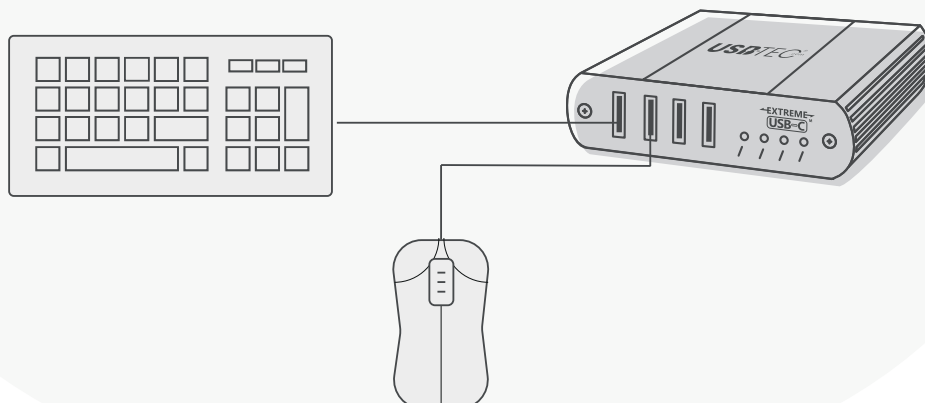
1. Connect a Cat 5e (or better) cable (not provided) into a network switch or wall network port connected to a switch.
2. Connect the opposite end of the Ethernet cable into the Link port of the Remote Extender
3. Place the Remote Extender near the USB device(s).
4. Connect the provided power adapter to an available AC power outlet, and to the Power port of the Remote Extender.

### Remote Extender (back view)



**Attach your USB device(s) to the Remote Extender.**

### Remote Extender (front view)



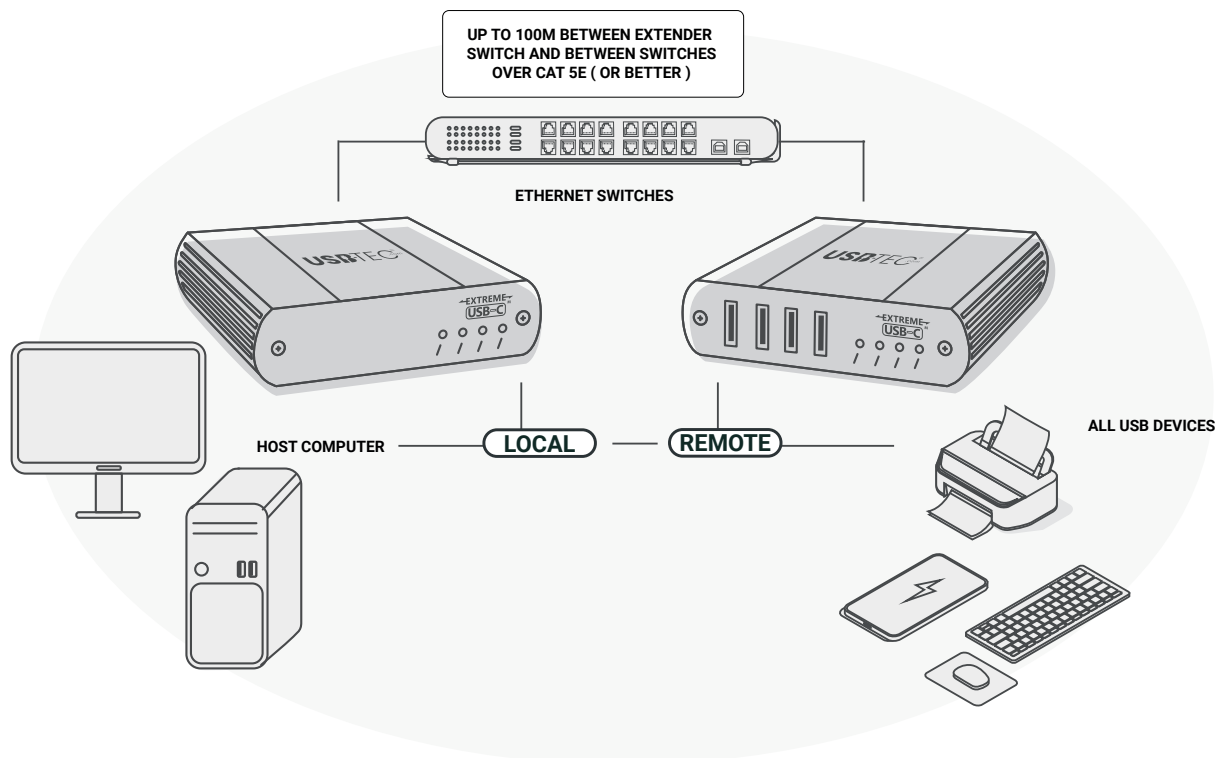


## Installing the USB2G4EXT2 as Direct Connect (**Direct Connect**)

### Requirements

To complete the installation, you will also require the following items that are not included with the product:

- USB compatible computer (host computer) with a USB compliant operating system
- USB compatible device (s)
- One or Two Cat 5e (or better) cables



### Preparing Your Site

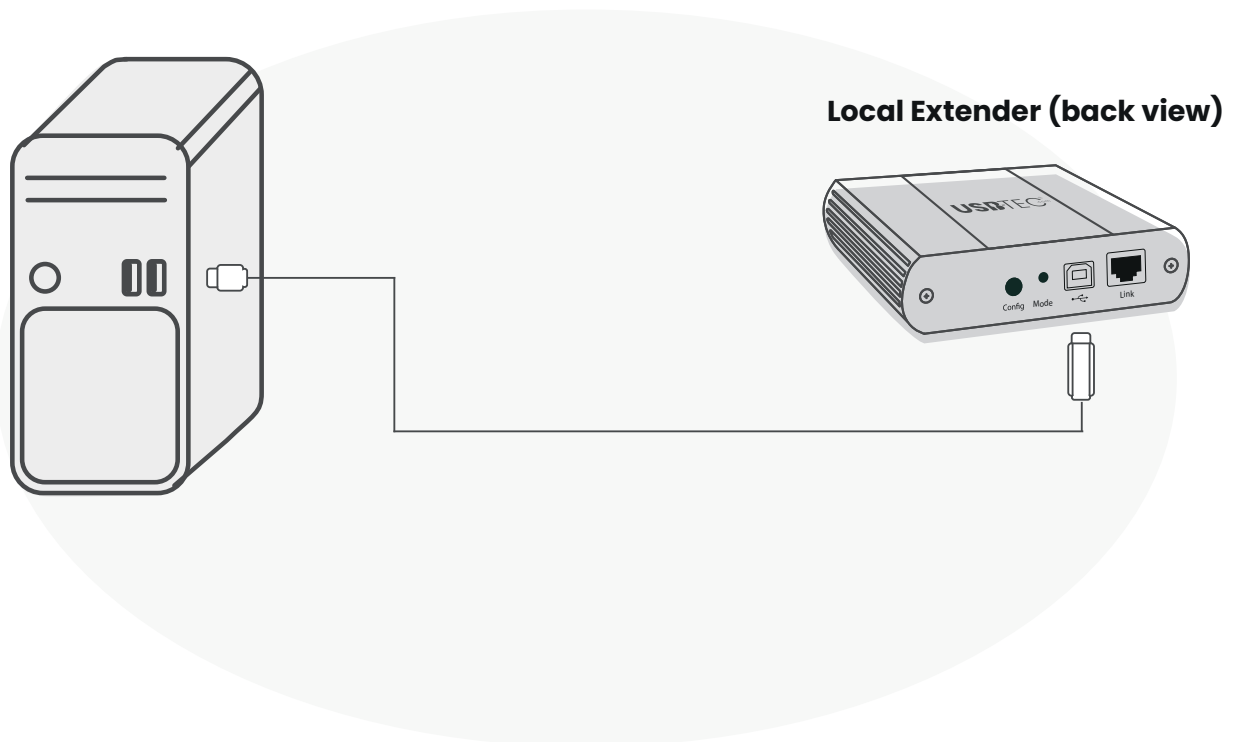
Before you can install the USB2G4EXT2, you need to prepare your site:

1. Place the computer where desired and set it up.
2. Ensure that where you want to locate the USB devices) is within 100m (300ft) of the computer. If not, adjust the location of the devices and/or computer accordingly.

### Installing the Local Extender

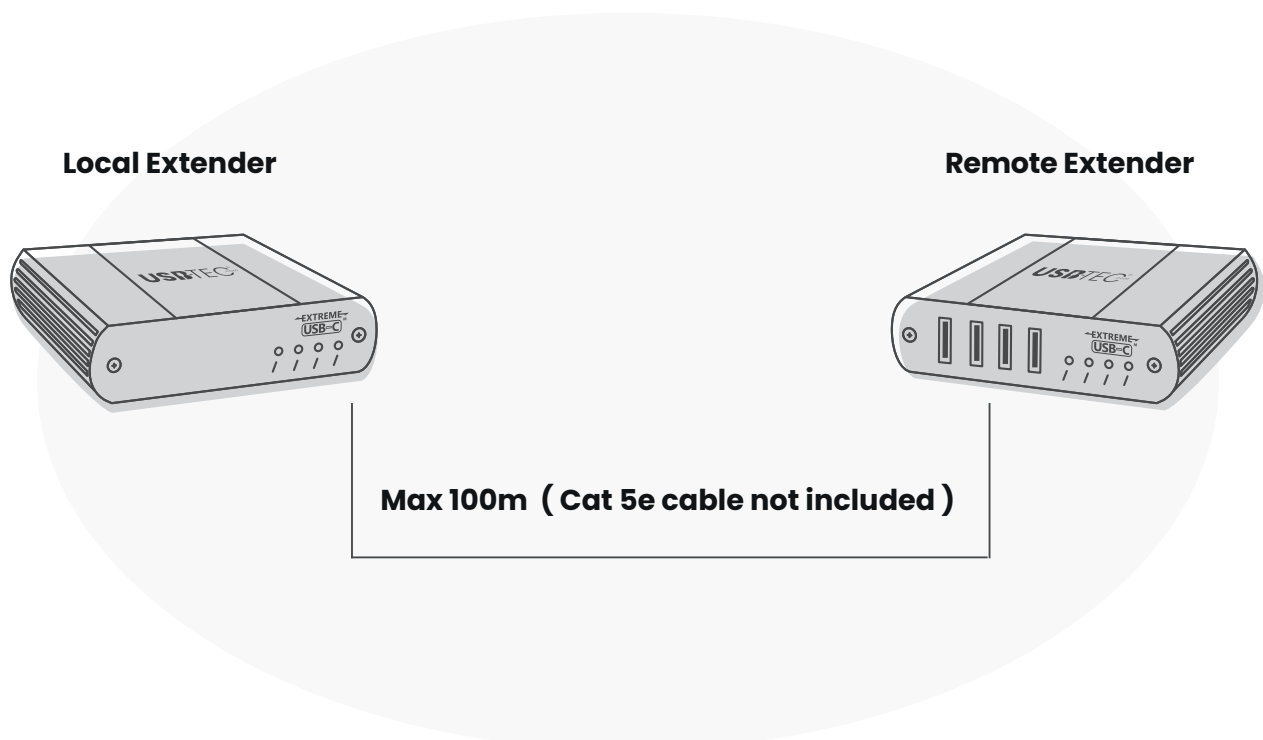
1. Place the Local Extender near the computer.
2. Connect the provided USB cable between the Local Extender's host port and a USB port on the host computer.

## Computer



## Connecting the Local Extender to the Remote Extender With Surface Cabling

1. Connect the Cat 5e or better cable into the Link port of the Local Extender.
2. Connect the other end of the Cat 5e or better cable

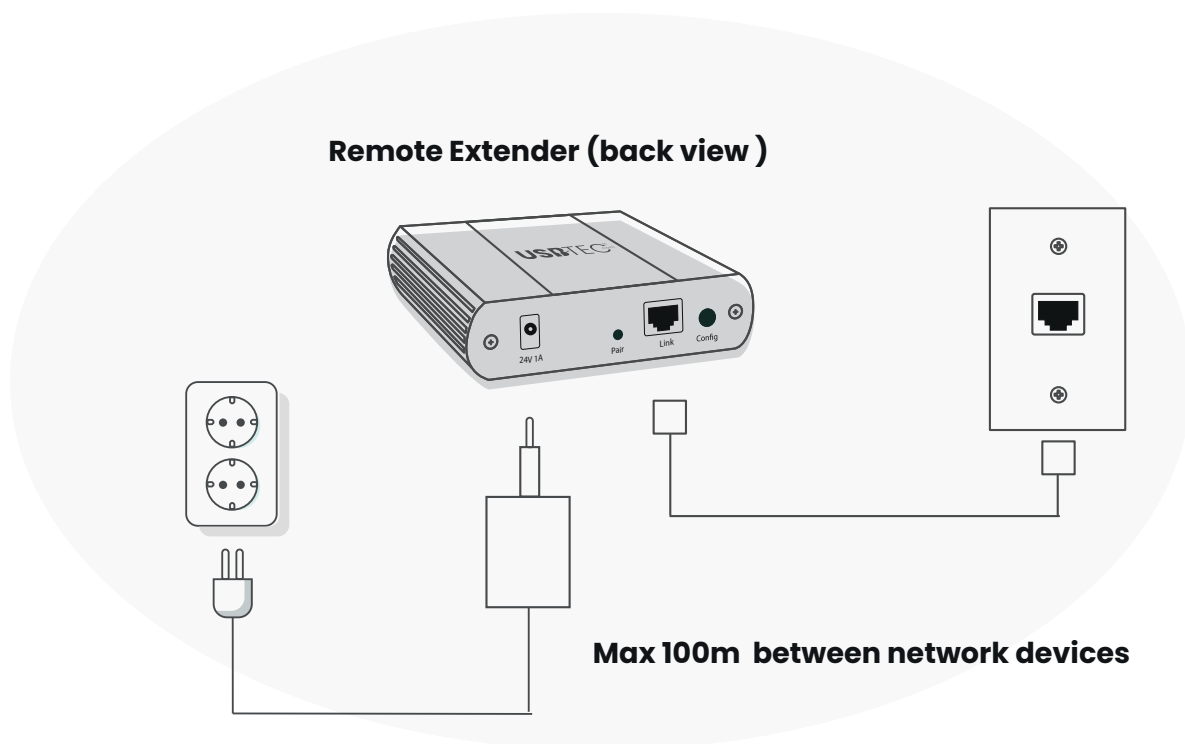


## Connecting the Local Extender to the Remote Extender (With Wall Network Ports)

1. Connect a Cat 5e or better cable (not provided) into the RJ45 wall outlet near the host computer.
2. Connect the opposite end of the cable into the Link port of the Local Extender.
3. Connect a Cat 5e or better cable (not provided) into the RJ45 wall outlet near the USB devices.
4. Connect the opposite end of the cable into the Link port of the Remote Extender.

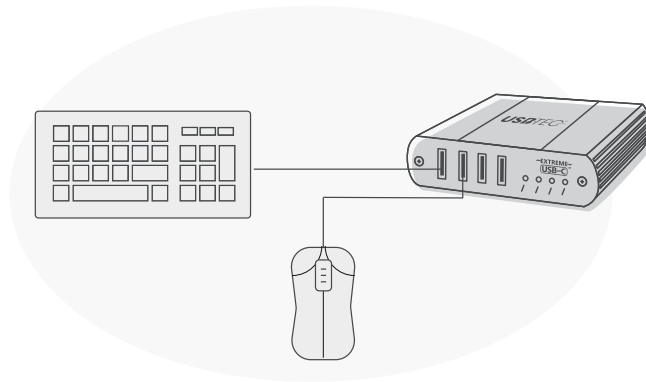
## Installing the Remote Extender

1. Place the Remote Extender near the USB devices).
2. Connect the provided power adapter to an available AC power outlet, and to the power port of the Remote Extender.



3. Attach your USB device(s) to the Remote Extender.

## Remote Extender (front view)



### Verifying Installation

1. On the Local and Remote Extender, check that the Power, Status, Link and Host LEDs are on.

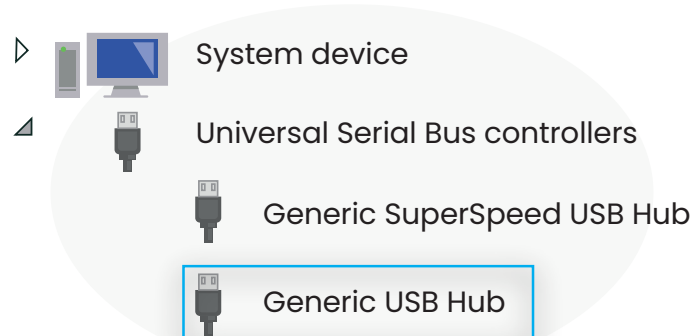
#### NOTE!

For direct connect, if the Host or Link LEDs are permanently off, then the cabling between the Local and Remote Extender may not be installed properly or is defective.

For network connect, if the Link LED is blinking, then the network connection between the Local and Remote Extender is not complete and there may be faulty cabling, network components, misconfigured network components, or the Local and Remote Extender may need to be re-paired together ( see the section on pairing a Local and Remote Extender page.13 ).

2. **Windows:** Open the Device Manager by right-clicking on Computer, and then select Manage. In the new Computer Management window, select Device Manager from the left window panel (For Windows 8, open the Control Panel and select Device Manager).

Expand the entry for Universal Serial Bus controllers by clicking the "+" sign. If the USB2G4LEXT2 has been installed correctly you should find it listed as a "Generic USB Hub".



### 3. Mac OS:

Open the System Profiler to confirm that the USB2G4EXT2 has installed correctly. In the left hand column under Hardware, select "USB" and inspect the right hand panel. If the extender has been installed correctly, you should find it listed as a "Hub" under the USB High-Speed Bus/USB Bus.

To open System Profiler in OS X: Open the Finder, select Applications, then open the Utilities folder and double click on the System Profiler icon.

### Pairing and Unpairing Local and Remote Extenders

#### Pairing the Local and Remote Extender

The extenders will be paired with each other out of the box, so no pairing action should be required. However, if you wish to change the Local and Remote Extender pairings across a network, then the following steps must be taken:

1. Ensure the Local and Remote Extender are directly connected to each other, or are connected to the same subnet on your network.
2. Press and hold the Pairing button on the back of the Local Extender. Release the button within 10 seconds. The Link LED will start flashing.
3. Within 10 minutes of activating the pairing mode on the Local Extender, press and hold the Pairing button on the back of the Remote Extender. Release the button within 10 seconds. The Link LED will start flashing.
4. The Link LED on both units may start flashing more slowly before finally turning on.

Once the Link LEDs are solid, the link is established between both extenders.



If more than 10 minutes pass before the units are paired, then the extenders will switch back to regular mode and reestablish the previous links they had, if any. To cancel pairing mode, press and hold the Pairing button a second time. Release it within 10 seconds.

#### Unpairing an Extender

If for any reason an extender needs to have its pairing removed, this can be done by pressing and holding the Pair button for longer than 10 seconds. Once this is completed the unit will not be paired to any other extender.

## Compatibility

The USB2G4LEXT2 complies with USB 1.1 and USB 2.0 specifications. However, there is no guarantee that all USB devices or hosts will be compatible with the USB2G4LEXT2, as there are a number of different characteristics that may impact the operation of USB devices over extended distances.

## Troubleshooting

The following table provides troubleshooting tips. The topics are arranged in the order in which they should be executed in most situations.

Problem	Cause	Solution
All LEDs on the Local Extender are off.	The Local Extender is not receiving power from the USB port.	<ol style="list-style-type: none"> <li>1. Ensure that the host computer is connected to the Local Extender.</li> <li>2. Move the USB connector to another USB port on the host computer.</li> </ol>
All LEDs on the Local Extender are off.	The Remote Extender is not receiving power from the AC adapter.	<ol style="list-style-type: none"> <li>1. Ensure that the AC power adapter is properly connected to the Remote Extender.</li> <li>2. Check that the AC adapter is connected to a live source of electrical power. Check that the Remote power LED is illuminated.</li> </ol>
Link LEDs on the Local and the Remote Extenders are off.	There is no connection between the Local and Remote Extenders.	<ol style="list-style-type: none"> <li>1. Ensure Cat 5e cable is connected between the Local and Remote Extenders. Cat 5e or better cable, UTP with a straight through connector and no crossovers, and 8 conductor RJ45 connectors are used at both ends.</li> <li>2. Connect a short Cat 5e patch cord between the Local and Remote Extenders to determine if the original Cat 5e cable is defective.</li> </ol>
Link LEDs are blinking.	<ul style="list-style-type: none"> <li>• There is no connection between the Local and Remote Extenders.</li> <li>• Units may not be paired to each other.</li> <li>• Network switches exist on different subnets.</li> <li>• Network switch (es) are blocking traffic from the extenders.</li> </ul>	<ol style="list-style-type: none"> <li>1. Ensure Cat 5e cable is connected between the Local and Remote Extenders. Cat 5e or better cable, UTP with a straight through connector and no crossovers, and 8 conductor RJ45 connectors are used at both ends.</li> <li>2. Connect a short Cat 5e patch cord between the Local and Remote Extenders to determine if the original Cat 5e cable is defective.</li> </ol>
Link LED on the Local and the Remote Extenders are blinking slowly.	The extenders are paired with each other but have not yet established a link.	<ol style="list-style-type: none"> <li>1. Wait for a few minutes for the LEDs to go solid.</li> <li>2. If LEDs do not go solid, contact your network administrator to determine if any traffic is being blocked between the extenders.</li> </ol>
My USB device does not work properly.	Insufficient bandwidth is available on the network to support the device.	Connect the Local and Remote Extenders directly to each other and try the USB device again.
My USB device does not work at all.	Insufficient bandwidth is available on the network to support the device. <ul style="list-style-type: none"> <li>• The Local Extender is paired to the wrong Remote Extender.</li> </ul>	<ol style="list-style-type: none"> <li>1. Connect the Local and Remote extenders directly to each other and try the USB device again.</li> <li>2. Follow the instructions on page 11 and pair the Local to the Remote Extender that is connected to the device you wish to use</li> </ol>

<b>Cabling</b>	Cat 5e UTP or betterPorts
<b>Local Unit Connectors</b>	4
<b>Remote Unit Connectors</b>	1 x RJ-45 Female 1 x USB B (4 pin) Female
<b>Maximum Cable Length</b>	330 ft [100 m]
<b>Maximum Data Transfer Rate</b>	1 x RJ-45 Female 4 x USB A (4 pin) Female
<b>Enclosure Material</b>	Steel
<b>Dimensions (LxWxH)</b>	100 x 76 x 26 mm
<b>Weight</b>	12.8 oz (363 g)
<b>LEDs</b>	Local Extender – 4 (Power, Link, Host Activity) Remote Extender – 4 (Power, Link, Host Activity)
<b>Power Adapter</b>	24V, 1A DC
<b>Operating Temperature</b>	0°C to 50°C (32°F to 122°F)
<b>Storage Temperature</b>	-10°C to 60°C (14°F to 140°F)
<b>Humidity</b>	20-80% RH
<b>Compatible Operating Systems</b>	Windows® 8 (32/64bit), 7 (32/64), Vista (32/64), XP (32/64), 2000, Windows® Server 2012, 2008 R2, 2003 (32/64), Windows CE 6.0, Mac OS 10.6 and up (Tested up to 10.9), Linux®

**FCC Radio Frequency Interference Statement Warning** – This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

**CE Statement** – We, USB-TEC.com, an Industrial IT Systems LTD brand, declare that the USB 2.0 UT2304S-LAN Series, to which this declaration relates, is in conformity with European Standards **EN 55032, EN 55035, EN 61000, and RoHS Directive 2011/65/EU + 2015/863/EU.**

**Industry Canada Statement** – This Class B digital apparatus complies with Canadian ICES-003.CAN ICES-3 (B)/NMB-3 (B)

**WEEE Statement** – The European Union has established regulations for the collection and recycling of all waste electrical and electronic equipment (WEEE). Implementation of WEEE regulations may vary slightly by individual EU member states. Please check with your local and state government guidelines for safe disposal and recycling or contact your national WEEE recycling agency for more information.

**Product Operation and Storage** – Please read and follow all instructions provided with this product and operate for intended use only. Do not attempt to open the product casing as this may cause damage and will void warranty. Use only the power supply provided with this product. When not in use, the product should be stored in a dry location between -20°C and 70°C.



**Support:**  
support@usb-tec.com

**Sales:**  
sales@usb-tec.com

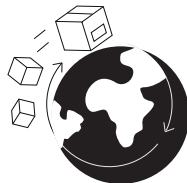
**USB-TEC**  
**Powered by Industrial IT Systems**  
Unit 2, Tungsten Bldg,  
Brighton BN41 1RA, UK



**Premium Quality**  
**incorporating world leading**  
**ExtremeUSB® Technology**



**Global Support**

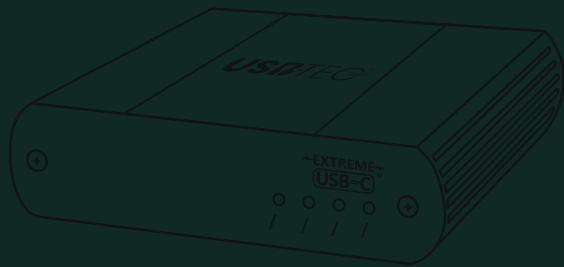


**Swift Delivery**



**Expert Advice**





**USB-TEC**.com  
*Extend Beyond Limits*



[www.usb-tec.com](http://www.usb-tec.com)