Icron USB Extender Overview

All Icron USB extender solutions include the ExtremeUSB® suite of features such as transparent USB extension, true plug and play (no software drivers), and compatibility with Windows®, Linux® and Mac OS X® operating systems. A complete system includes a LEX (Local Extender), a REX (Remote Extender), and a power adapter.

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USB[1]	USB Extender Model	Max. Distance	Transmission Media[2]	Power Adapter Location	USB Port(s)
USB 3.0	USB 3.0 Spectra™ 3022	100m[3]	Multimode Fiber	REX	2
USB 3.0	USB 3.0 Spectra™ 3001-15	15m	Active Copper Cable	Bus Powered	1
USB 2.0	USB 2.0 Ranger® 2304-LAN	100m	Cat 5e or Local Area Network (LAN)	REX	4
USB 2.0	USB 2.0 Ranger® 2304	100m	Cat 5e	REX	4
USB 2.0	USB 2.0 Ranger® 2244	10km	Singlemode Fiber	REX	4
USB 2.0	USB 2.0 Ranger® 2224	500m	Multimode Fiber	REX	4
USB 2.0	USB 2.0 Ranger® 2212	100m	Cat 5e	LEX[4]	2
USB 2.0	USB 2.0 Ranger® 2211	100m	Cat 5e	LEX or REX[5]	1
USB 2.0	USB 2.0 Ranger® 2204	100m	Cat 5e	REX	4
USB 2.0	USB 2.0 Ranger® 2201	100m	Cat 5e	REX	1
USB 1.1	USB 1.1 Rover® 2850	85m[6]	Cat 5e	Bus Powered	2
USB 1.1	USB 1.1 Rover® 1850	85m[6]	Cat 5e	Bus Powered	1

[1] Where USB 2.0 is listed, USB 1.1 is also supported. USB 3.0 extenders are not backward compatible.
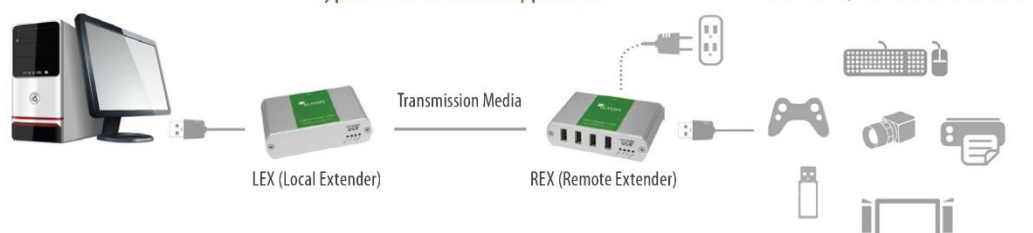[2] Specified Category cabling is a minimum requirement; higher grades are supported (e.g. Cat 6, Cat 7).
[3] 100m or more is achievable when using USB 3.0 bulk traffic cameras; 50m with storage type USB 3.0 devices.
[4] Power is delivered over transmission link cable to the REX.
[5] Either the LEX or REX can use a power adapter. Only one is required.
[6] Up to 40m is achievable for all USB devices; 85m is achievable for most low powered HID USB devices.

EXTREME
USB®

Typical USB extension application

USB 3.0, 2.0 & 1.1 Devices

Transmission Media

LEX (Local Extender)   REX (Remote Extender)

USB Specifications and Markets

USB Specifications

USB 3.0 (Released November 2008)
The SuperSpeed USB 3.0 specification provides for throughputs of up to 5Gbps which is a significant improvement over USB 2.0. This increased bandwidth is ideal for storage, imaging, and multimedia. However, USB 3.0 is effectively constrained by the cable's distance limitation of just 3 meters (9.8 feet). USB 3.0 ports are backward compatible with USB 2.0 connectors, but not all USB 3.0 ports are compatible with USB 2.0 connectors. For example, the USB 3.0 type B connector has been designed to fit only a USB 3.0 type B port. Thus, USB 3.0 and USB 2.0 will co-exist for some time.

USB 2.0 (Released April 2000)
USB 2.0 was developed to offer faster throughputs compared to USB 1.1 while still maintaining backward compatibility with Low-Speed and Full-Speed devices. USB 2.0's High-Speed transfer rate is 480Mbps and the distance limitation is 5 meters (16.4 feet), the same as USB 1.1. The majority of USB devices shipped each year are USB 2.0 and is expected to remain as such until 2016.

USB 1.1 (Released August 1998)
USB 1.1 provides support for two interface speeds: Low-Speed at 1.5Mbps and Full-Speed at 12Mbps, with a distance limitation of 5 meters (16.4 feet). The two interface speeds target specific classes of devices to provide the most efficient and cost-effective interconnect solution. Low-Speed devices are typically interactive human input devices (HID) such as keyboards, mice and game controllers. Full-Speed devices are typically application specific input devices such as microphones, cameras, printers and interactive whiteboards.

Industrial Automation   **Medical**   **Digital Signage**

Markets

Industrial Control/Automation:
Allows for remote control and monitoring of equipment.

Machine Vision:
Extend AIA USB3 Vision™ cameras up to 100m and beyond over fiber optics.

Digital Signage/Interactive Kiosks:
Interact with displays which are located at significant distances from the host or server.

KVM Extension:
Provides remote keyboard, video, and mouse separating the user from the computer.

Medical Device Connectivity:
Allows for the computer to be located remotely from medical imaging or diagnostic equipment.

Pro AV:
Remotely access your USB Pro AV equipment from a secure location.

Security Web Camera/Access Control:
Capture video at distances up to 10km over fiber optics or 100m over Cat 5e.

Education:
Enables the use of remote projectors or interactive white boards within the classroom.

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