icron

USB Rover 200

User Guide

Extending the Range of USB

Thank you for purchasing the USB Rover 200.

Please read this guide thoroughly.

This document applies to Part Numbers: 00-00166 through 00-00196.

FCC Radio Frequency Interference Statement Warning

The USB Rover has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The USB Rover generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user guide, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE Statement

This Class B digital apparatus complies with Canadian ICES-003.

IC Statement

This Class A digital apparatus complies with Canadian ICES-003.

 Document #90-00143-B01

Contents

Introduction

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.

Rover 200 Product Contents

- USB Rover 200 User Guide
- LEX unit (Local Extender) and REX unit (Remote Extender) with integral cable
- AC power adapter (1)

Requirements

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

- USB compatible computer
- USB device

About the USB Rover 200

The USB Rover breaks the five-meter distance barrier for the connection of USB devices and allows users to enjoy the benefits of USB technology beyond the desktop. With the USB Rover, USB devices can be located up to 40 meters from the host computer. In addition, the USB Rover provides electrical isolation between the host and the device.

The USB Rover is composed of two individual units, the LEX unit and the REX unit connected by a custom length of fiber cable.

The LEX Unit

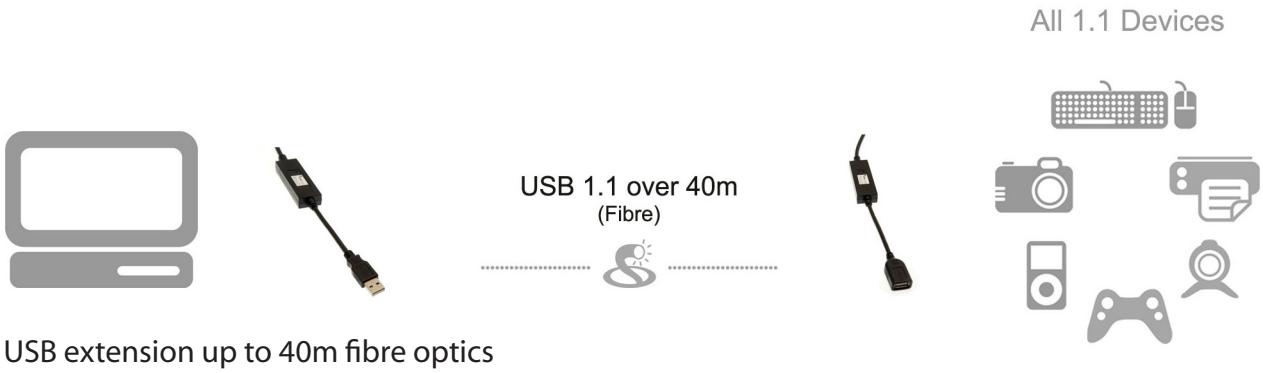
The LEX unit connects to the host computer through a captive USB Type A connector. The LEX unit is powered by the host over USB.

The LEX unit connects to the computer using the attached USB cable. Power for this unit is provided by the USB on the host PC.

The REX Unit

The REX unit connects to the USB device through a USB Type A receptacle. An external AC adapter provides power to the unit and to any USB device that may be connected. The REX unit of the USB Rover 200 enables you to connect one full-speed or low-speed USB device.

Installation guide



USB extension up to 40m fibre optics

Before you can install the Rover 200, you need to prepare your site.

1. Determine where the computer is to be located and set up the computer.
2. Determine where you want to locate the USB device.

Installing the LEX unit

1. Place the LEX unit near the host computer.
2. Plug the Type A connector from the LEX unit into the USB port on the computer.

Installing the REX unit

1. Place the REX unit near the USB device.
2. Plug the AC adapter into an available AC outlet. Connect the DC power cord to the REX unit.

Connecting the LEX unit to the REX unit

1. Switch on the computer and check that the AC adapter is powered on.
2. Depending on the operating system you are using, open the Device Manager dialog box.
3. Expand the entry labeled Universal Serial Bus Controllers.
4. In the expanded entries you should find one for a Generic USB Hub.

Connecting a USB Device

1. Install any software required to operate the USB device. Refer to the documentation for this device, as required.
2. Connect the USB device to the USB port on the REX unit.

Compatibility

The USB Rover complies with USB 1.1 specifications governing the design of full-speed and low-speed USB devices. However, Icron Technologies Corporation does not guarantee that all USB 1.1 devices are compatible with the USB Rover.

Troubleshooting

The following table provides troubleshooting help. The topics are arranged in the order in which they should be executed in most situations. If you are unable to resolve the problem after following these instructions, please contact technical support for further assistance (see page 12).

PROBLEM	CAUSE	SOLUTION
Generic USB Hub does not appear in Device Manager.	Installation is not complete.	1. Ensure that the LEX unit is connected to a USB port on the computer 2. Check that the AC adapter is connected to the REX unit and that it is provided with power. 3. Disconnect the LEX unit
The USB device does not operate correctly.	• The USB device is not connected to the REX unit. • The USB device is malfunctioning. • The computer does not recognise the USB device. • The computer does not support USB hubs. • The USB Rover is malfunctioning.	1. Check that the USB device is securely connected to the USB port on the REX unit. 2. Disconnect the LEX unit from the computer. 3. Connect the USB device directly to the USB port on the computer. 4. If the device does not operate properly, consult the user documentation for the device. 5. If the device operates properly when dirrctly connected to the computer, connect another full speed device (of a different type) to the REX unit. Connect the LEX unit to the computer. 6. If the second device does not operate, the extender may be malfunctioning. Contact technical support for assistance. 7. If the second device does operate properly, the first device may not be compatible with the USB Rover. Contact technical support for assistance.

Frequently Asked Questions

Please visit Icron's website for answers to FAQs: http://www.icron.com/products/usb/faq.php

Specifications

Maximum range	40 metres (132 ft)
Cable characteristics	Riser jacket of retardant PVC with 4 strands of multimode fibre of dimension 62.5/125 µm Tensile strength: 1200N Minimum bend radius: 6.8 cm
USB device support	1 x full-speed (12 Mb/s) or low-speed (1.5 Mb/s) device
USB hub support	Conventional USB hubs may be connected in series with the USB Rover 200. The maximum number of such hubs is: 1 metre cables: 4 hubs 10 metre cables: 4 hubs 20 metre cables: 3 hubs 30 metre cables: 2 hubs 40 metre cables: 1 hub
Maximum power available to USB at REX unit	500 mA
Power adapter capacity	5V DC @ 2.6A (connected at REX)
Current available to USB at REX	1 x USB Type A connector
LEX unit connector (upstream)	1 x USB Type A port
REX unit connector (downstream)	73mm x 23mm x 12mm / 2.875" x 0.875" x 0.5"
LEX unit dimensions	73mm x 23mm x 12mm / 2.875" x 0.875" x 0.5"
Total system shipping weight	1 m: 0.57 kg / 1.2 lb 10 m: 0.75 kg / 1.6 lb 20 m: 1.05 kg / 2.2 lb 30 m: 1.26 kg / 2.8 lb 40 m: 1.53 kg / 3.37 lb
Temperature range	-10°C to 55°C
Regulatory testing	FCC, CE Class B

Limited Hardware Warranty

Icron Technologies Corporation warrants that any hardware products accompanying this documentation shall be free from significant defects in material and workmanship for a period of one year from the date of purchase. Icron Technologies Corporation's hardware warranty extends to Licensee, its customers and end users.

Hardware Remedies

Icron Technologies Corporation's entire liability and the Licensee's exclusive remedy for any breach of warranty, shall be, at Icron Technologies Corporation's option, either (a) return of the price paid or (b) repair or replacement of hardware, which will be warranted for the remainder of the original warranty period or 30 days, whichever is longer. These remedies are void if failure of the hardware has resulted from accident, abuse, or misapplication.

Limitation of Liability

The hardware warranty set forth in this agreement replaces all other warranties. Icron Technologies Corporation expressly disclaims all other merchantability and fitness for a particular purpose and non-infringement of third-party rights with respect to the hardware.

Icron Technologies Corporation dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty. Under no circumstances will Icron Technologies Corporation, its suppliers or licensors be liable for any costs of procurement or substitute products or services, lost profits, loss of information or data, or any other special, indirect, consequential, or incidental damages arising in any way out of the sale of, use of, or inability to use Icron Technologies Corporation product or service, even if Icron Technologies Corporation, its suppliers or licensors have been advised of the possibility of such damages. In no case shall Icron Technologies Corporation, its suppliers and licensors' liability exceed the actual money paid for the products at issue.

Because some jurisdictions do not allow the limitation of implied warranties of liability for incidental, consequential, special, or indirect damages, the above limitation may not always apply.

The above limitations will not apply in case of personal injury where and to the extent that applicable law requires such liability.

Obtaining Warranty Service

To obtain warranty service, you must contact Icron Technologies Corporation within the warranty period for a Return Material Authorization (RMA) number. Icron Technologies Corporation will not accept returns without an authorized RMA number. Be sure you have the serial numbers of the LEX unit and REX unit units before calling. Package the product appropriately for safe shipment and mark the RMA number on the outside of the package. The package must be sent prepaid to Icron Technologies Corporation. We recommend that you insure it or send it by a method that provides for tracking of the package. The repaired or replaced item will be shipped to you, at Icron Technologies Corporation's expense, not later than thirty days after Icron Technologies Corporation receives the defective product.

Address the returned product to:

RMA Coordinator
Icron Technologies Corporation
4664 Lougheed Highway, Suite 221
Burnaby, BC V5C 5T5 Canada

Tel: 1-604-638-3920

Contacting Sales

Email: sales@icron.com
Tel: 1-604-638-3920

Contacting Technical Support

Email: techsupport@icron.com

To help us serve you better, please include the following information with your technical support request:

- Host computer make and model
- Type of operating system installed (e.g. Windows XP, Mac OS X, etc.)
- Part number and serial number of both LEX unit and REX unit
- Make and model of any USB device(s) attached to the Ranger
- Description of the installation
- Description of the problem

NOTES

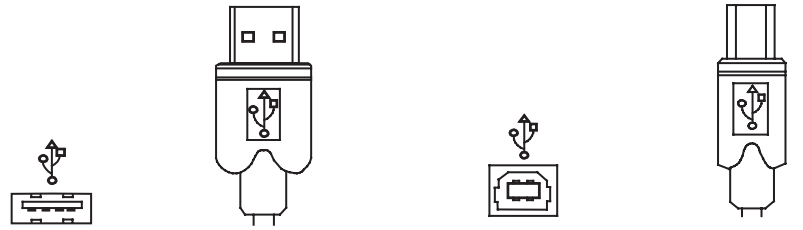
Technical Glossary

Category 5 (Cat 5) Network Cabling

Category 5 cable is commonly also referred to as Cat 5. This cabling is available in either solid or stranded twisted pair copper wire variants and as UTP (Unshielded Twisted Pair) or STP (Shielded Twisted Pair). cables are not surrounded by any shielding making them more susceptible to electromagnetic interference (EMI). STP cables include shielding over each individual pair of copper wires and provides better protection against EMI. Cat 5 has been succeeded by Cat 5 cabling which includes better support for high speed communications and reliability.

USB Cables

USB cables have two distinct connectors. The Type A connector is used to connect the cable from a USB device to the Type A port (fe) on a computer or hub. The Type B connector is used to attach the USB cable to a USB device.



RJ45

The Registered Jack (RJ) physical interface is what connects the network cabling (Cat 5) to the LEX and REX unit. You may use either the T568A scheme (Table 1) or the T568B scheme (Table 2) for cable termination as the Ranger uses all four pairs of the cable. RJ45 connectors are somtimes also referred to as 8P8C connectors.

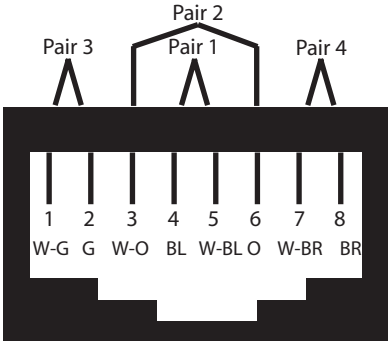
RJ45 Pin Positioning

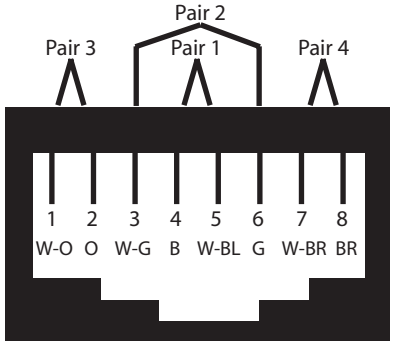
Table 1 - T568A Wiring

PIN	PAIR	WIRE	CABLE COLOR
1	3	1	WHITE/GREEN
2	3	2	GREEN
3	2	1	WHITE/ORANGE
4	1	2	BLUE
5	1	1	WHITE/BLUE
6	2	2	ORANGE
7	4	1	WHITE/BROWN
8	4	2	BROWN

Table 2 - T568B Wiring

PIN	PAIR	WIRE	CABLE COLOR
1	2	1	WHITE/ORANGE
2	2	2	ORANGE
3	3	1	WHITE/GREEN
4	1	2	BLUE
5	1	1	WHITE/BLUE
6	3	2	GREEN
7	4	1	WHITE/BROWN
8	4	2	BROWN





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