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INCORPORATED

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**XTENDEX® Series**

# USB-C5-200

## 200 Foot USB Extender Installation and Operation Manual



Front and Rear View of USB-C5-200 Remote Unit

**TRADEMARK**

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**CHANGES**

The material in this guide is for information only and is subject to change without notice. Network Technologies Inc reserves the right to make changes in the product design without reservation and without notification to its users.

***Note: CAT5/5e/6/7 connection cable used between NTI XTENDEX Series Local and Remote or any XTENDEX Series products should not be run underground, outdoors or between buildings.***

**WARNING: Outdoor or underground runs of CAT5/5e/6/6a/7 cable could be dangerous and will void the warranty.**

## **TABLE OF CONTENTS**

|   |   |
|---|---|
| Introduction.....                         | 1 |
| Materials.....                            | 1 |
| Features and Functions.....               | 2 |
| Preparation for Installation .....        | 2 |
| Installation .....                        | 3 |
| Installing The Local Unit .....           | 3 |
| Installing the Remote Unit.....           | 3 |
| Connect The CATx Cable.....               | 4 |
| Plug-in and Boot Up.....                  | 4 |
| Interconnection Cable Wiring Method ..... | 5 |
| Technical Specifications.....             | 5 |
| Troubleshooting.....                      | 6 |
| Warranty Information .....                | 6 |

## **TABLE OF FIGURES**

|  |   |
|--|---|
| Figure 1- Connect device cable to the Local Unit .....     | 3 |
| Figure 2- Connect extended devices to the Remote Unit..... | 3 |
| Figure 3- Connect CATx cable.....                          | 4 |
| Figure 4- Connect the AC adapter .....                     | 4 |
| Figure 5- View looking into RJ45 female.....               | 5 |

## INTRODUCTION

The USB Extender extends four USB devices up to 200 feet. Each USB extender consists of a local unit that connects to a computer and a remote unit that connects to four USB devices.

- Supports fully transparent USB connections – able to support all common hardware platforms including PC, SUN and MAC and their associated peripherals.
- Extend devices such as keyboards, mice, printers, game controllers, USB flash drives, touch screen monitors, whiteboards, etc.
- Compliant with USB 1.1 specifications.
- Supports low speed and full speed USB devices
- Supports Plug-n-Play specification

## MATERIALS

### Materials Included with this kit:

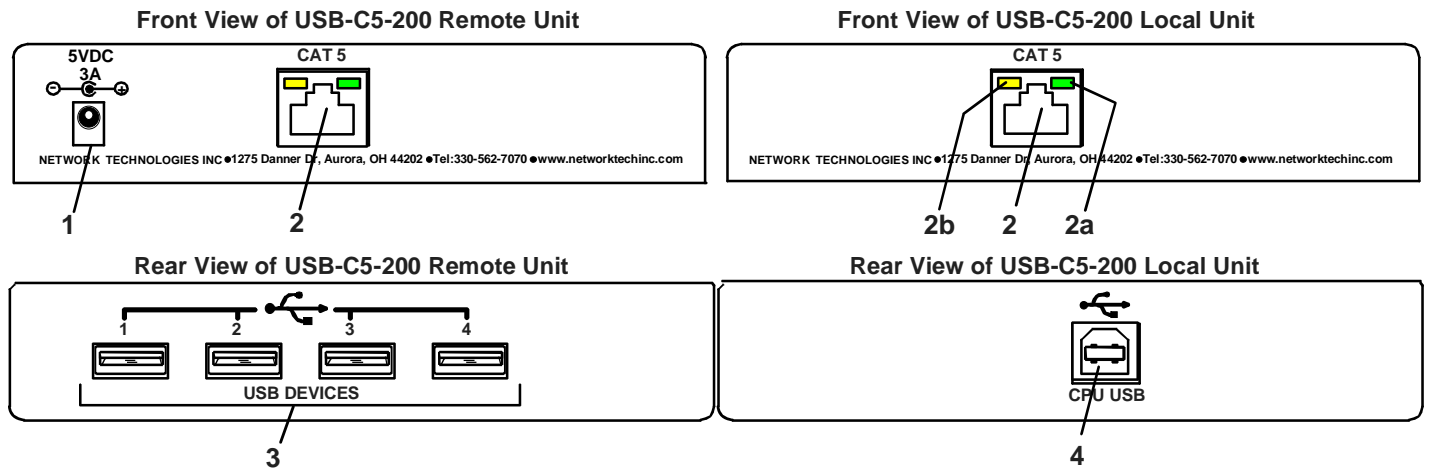
- ✓ NTI XTENDEX Local and Remote Unit
- ✓ 1-100VAC to 240VAC at 50 or 60Hz-5VDC/3.0A AC Adapter
- ✓ 1-USB2-AB-1M-5T USB Type A Male-to-USB Type B Male 1 meter cable
- ✓ This manual

### Materials *Not* supplied but **REQUIRED**:

- CAT5/5e Solid/Stranded UTP/STP; CAT6 Solid UTP/STP ; CAT6a Solid UTP; CAT7 Solid STP cable(s) terminated with RJ45 connectors wired straight thru- pin 1 to pin 1, etc. (see page 5 for proper EIA/TIA 568 B wiring method)

*Cables can be purchased from Network Technologies Inc by calling (800) 742-8324 (800-RGB-TECH) in the US and Canada or (330) 562-7070 (worldwide).*

## FEATURES AND FUNCTIONS



1. **5VDC- 3.0A-** connection jack for the AC adapter
2. **CAT 5-** RJ45 females- for connecting the CAT 5 cables
  - 2a. Green LED- power indicator- illuminates when power has been supplied to the unit
  - 2b. Yellow LED-traffic indicator- blinks when there is communication between the local and remote units
3. **USB-** Type A connectors- for connecting extended USB devices
4. **CPU USB-**Type B connector- for connecting to a USB connector on the CPU for USB device support

## PREPARATION FOR INSTALLATION

- Locations should be chosen for the mice, keyboards, and any other devices where there is also space to connect the Remote and Local Units within the distance provided by the cables. If extension cables are needed, contact NTI for the cables required.
- The CAT5 cable must be run to the locations where the Remote and Local Units will be connected. Be careful to route the cable away from any sources of magnetic fields or electrical interference that might reduce the quality of the extended signals (i.e. AC motors, welding equipment, etc.).
- All cables should be installed in such a way that they do not cause stress on their connections to the equipment. Extended lengths of cable hanging from a connection may interfere with the quality of that connection. Secure cables as needed to minimize this.
- Properly shut down and disconnect the power from the CPU and devices to be separated. If other equipment is involved whose connections are being interrupted, be sure to refer to the instruction manuals for that equipment for proper disconnection and re-connection procedures before proceeding.

**Note:** CAT5 connection cable used between NTI XTENDEX Series Local and Remote or any XTENDEX Series products should not be run underground, outdoors or between buildings.

**WARNING:** Outdoor or underground runs of CAT5 cable could be dangerous and will void the warranty.

# INSTALLATION

## Installing The Local Unit

1. Connect the USB2-AB-1M-5T USB cable from the Local Unit to the back of the CPU. (See Figure 1.)
  - a) Connect the USB Type A male cable end to a USB Type A female connector on the CPU.
  - b) Connect the USB Type B male cable end to the USB Type B female connector on the Local Unit.

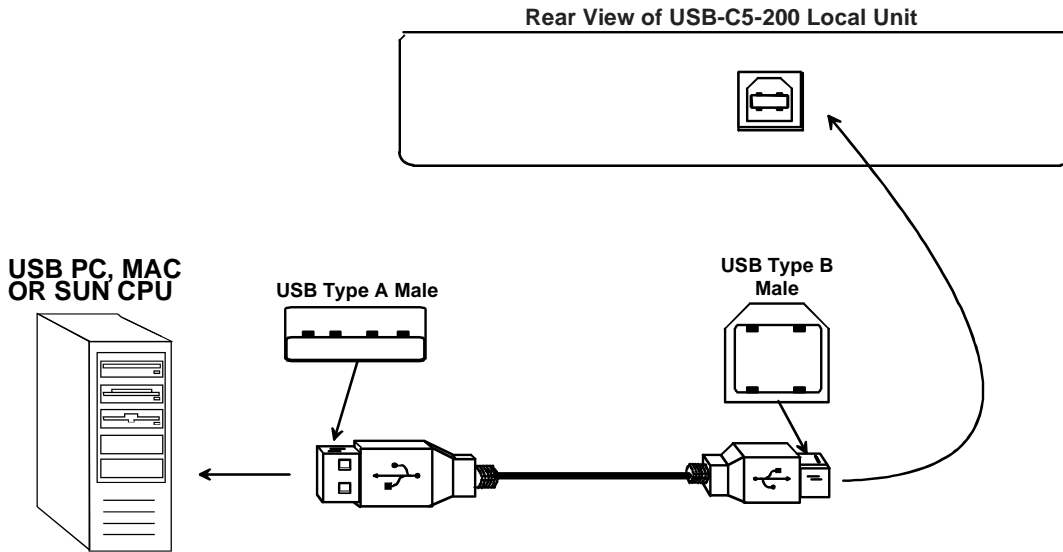


Figure 1- Connect device cable to the Local Unit

## Installing the Remote Unit

Connect cables from the Remote Unit to the extended devices as shown below.

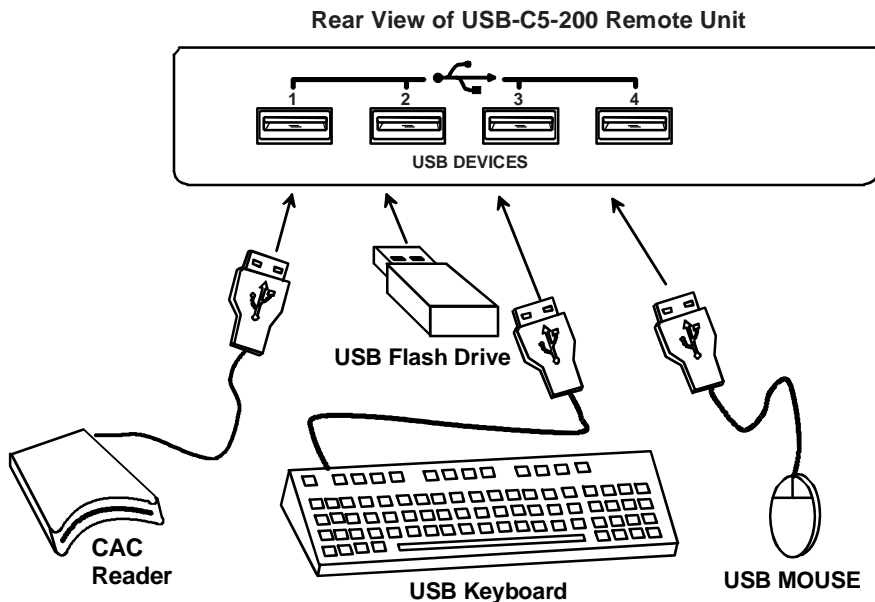


Figure 2- Connect extended devices to the Remote Unit

## Connect The CATx Cable

Connect the CATx cable between the “Cat 5” port on the Local and Remote Units. (See Figure 3.) When properly inserted the cable end should snap into place.

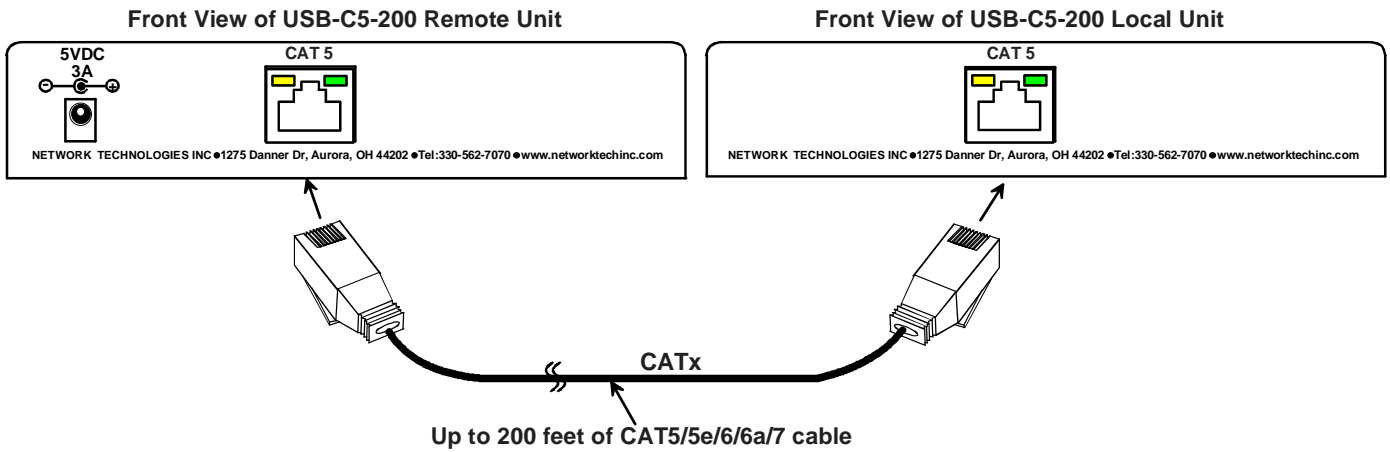


Figure 3- Connect CATx cable



**WARNING:** Never connect the XTENDEX to an Ethernet card, Ethernet router, hub or switch or other Ethernet RJ45 connector of an Ethernet device. Damage to devices connected to the Ethernet may result.

## Plug-in and Boot Up

1. Connect the AC adapter power connector to the 5VDC port on the Remote Unit. (The Local Unit is powered by the CPU.) Plug the AC adapter into a power outlet. The green LED on the RJ45 connector of the Remote Unit should illuminate, indicating that a proper power connection has been made to it. (See Figure 4.)

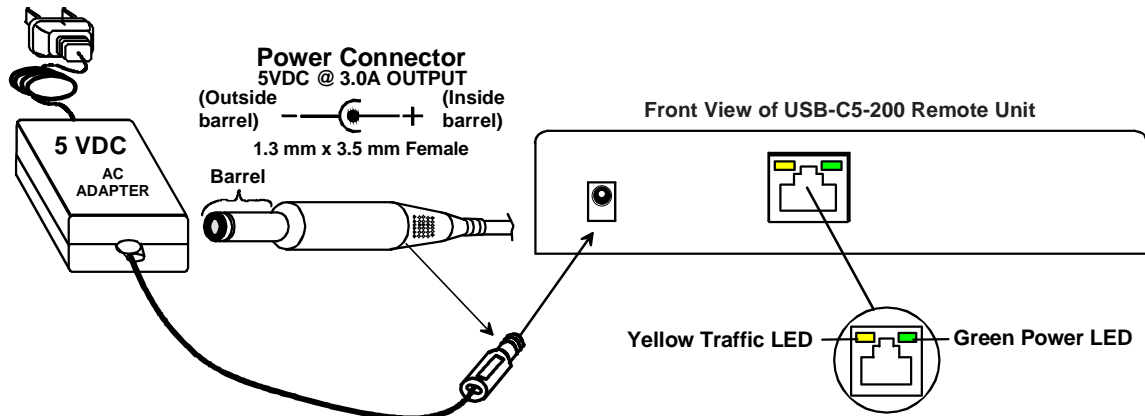


Figure 4- Connect the AC adapter

2. Turn ON the CPU. The green LED on the RJ45 connector of the Local Unit should illuminate. The CPU and remote devices should each react as if they were directly connected to each other.

**Note:** The yellow LED on RJ45 connector will blink anytime data traffic is passing between the Local and Remote Units, indicating proper CAT5 cable connection and communication. (See Figure 4)

## INTERCONNECTION CABLE WIRING METHOD

The connection cable between the remote and local is terminated with RJ45 connectors and must be wired according to the EIA/TIA 568 B industry standard. Wiring is per the table and drawing below.

| Pin | Wire Color   | Pair | Function |
|-----|--------------|------|----------|
| 1   | White/Orange | 2    | T        |
| 2   | Orange       | 2    | R        |
| 3   | White/Green  | 3    | T        |
| 4   | Blue         | 1    | R        |
| 5   | White/Blue   | 1    | T        |
| 6   | Green        | 3    | R        |
| 7   | White/Brown  | 4    | T        |
| 8   | Brown        | 4    | R        |

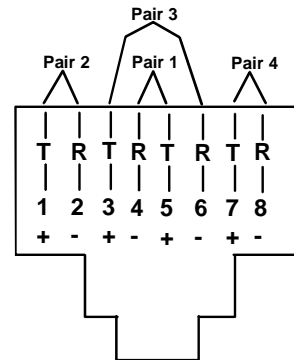


Figure 5- View looking into RJ45 female

## TECHNICAL SPECIFICATIONS

|   |   |
|---|---|
| USB to host CPU                         | USB Type B female   |
| USB to device                           | USB Type A female   |
| USB output power                        | 5V, 1.4A for 4 ports (<500mA per port)  |
| Interconnect Cable                      | CAT5/5e Solid/Stranded UTP/STP; CAT6 Solid UTP/STP ; CAT6a Solid UTP; CAT7 Solid STP EIA/TIA 568 B wiring |
| Remote Unit Power                       | 100V to 240V at 50 or 60Hz-5VDC/3.0A via AC adapter   |
| Local Unit Power                        | Powered by CPU  |
| Operating temperature                   | 32°F to 122°F (0°C to 50°C)   |
| Storage temperature                     | -20°F to 140°F (-30°C to 60°C)  |
| Operating and Storage Relative Humidity | 0 to 90% non-condensing RH  |
| Size (In.) WxDxH                        | 5.1x3.1x1.2   |
| Regulatory Approvals                    | RoHS, CE  |

### Distances for CAT5/CAT5e, CAT6 and CAT7 Cables

| CABLE                       | DISTANCE (feet) |
|-----------------------------|-----------------|
| CAT5/5e<br>Solid UTP/STP    | 200             |
| CAT5/5e<br>Stranded UTP/STP | 100             |

| CABLE                 | DISTANCE (feet)   |
|-----------------------|---|
| CAT6<br>Solid UTP/STP | 200   |
| CAT6a<br>Solid UTP    | 195<br>(Distance Includes<br>10ft patch cable at<br>each end) |
| CAT7<br>Solid STP     | 200   |

Longer lengths of CATx cable are not recommended.



## TROUBLESHOOTING

Each and every piece of every product produced by Network Technologies Inc is 100% tested to exacting specifications. We make every effort to insure trouble-free installation and operation of our products. If problems are experienced while installing this product, please look over the troubleshooting chart below to see if perhaps we can answer any questions that arise. If the answer is not found in the chart, a solution may be found in the knowledgebase on our website at <http://information.networktechinc.com/jive/kbindex.jspa> or please call us directly at **(800) 742-8324 (800-RGB-TECH)** or **(330) 562-7070** and we will be happy to assist in any way we can.

| Problem   | Cause  | Solution  |
|---|--|---|
| <b>Remote or Local Unit green power LED does not illuminate</b> | <ul style="list-style-type: none"> <li>• Power supply is not connected or plugged-in (Remote Unit).</li> <li>• CPU is not powered ON (Local Unit)</li> </ul> | <ul style="list-style-type: none"> <li>• Make sure outlet is live and AC adapter is plugged-in.</li> <li>• Make sure USB cable is fully inserted on both ends.</li> <li>• Make sure 5VDC jack is fully connected</li> </ul> |
| <b>CPU doesn't detect the keyboard and the mouse</b>            | <ul style="list-style-type: none"> <li>• Keyboard cable or mouse cable are loose</li> <li>• CATx cable is too long</li> </ul>                                | <ul style="list-style-type: none"> <li>• Check cable connections</li> <li>• CATx cable can be no more than 200 feet in length</li> </ul>  |

## WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **1-800-742-8324** (1-800-RGB-TECH) or **1-330-562-7070** or visit our website at <http://www.networktechinc.com> for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

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