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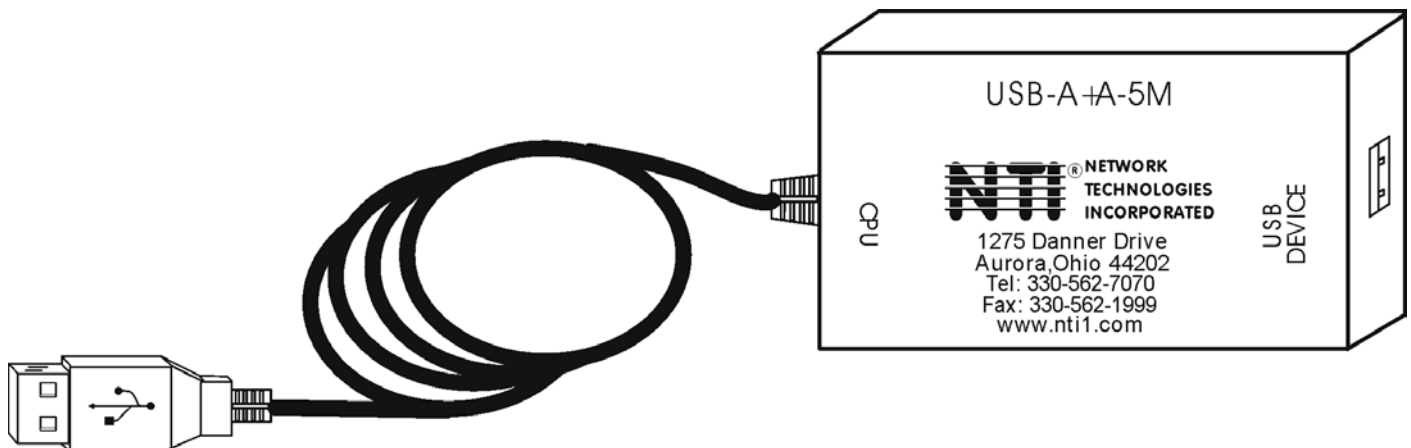
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# USB-A+A-5M (Improved Active USB 5 Meter Extension)

## INSTALLATION / USER GUIDE

MAN017

Rev Date 07/18/2002



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## **Warranty Information**

The warranty period on this product (parts and labor) is one (1) year from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at <http://www.nti1.com> for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

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### **Changes**

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## Introduction

The NTI USB-A+A-5M Improved Active USB 5 Meter Extension enables the transparent 5 meter extension of a USB type A female connection port on a USB host (i.e. USB CPU or NTI USB switch). Up to three (3) USB-A+A-5M Improved Active USB 5 Meter Extensions may be connected together to achieve a total extension length of 15 meters provided a self-powered USB device is being attached. Otherwise, two (2) USB-A+A-5M Improved Active USB 5 Meter Extensions may be connected together to achieve a total extension length of 10 meters. The USB-A+A-5M Improved Active USB 5 Meter Extension is a bus-powered device that requires no additional power supply.

**Note:** *Three cables can only be connected together if the device being extended has a current draw of less than 50 mA or is self-powered. See Limitations below.*

## Compatibility

- **\*ALL** USB WINDOWS CPUs
- **\*ALL** USB SUN CPUs
- **\*ALL** USB MAC CPUs
- USB NTI switches
- USB 1.1 compatible (low speed and full speed) except suspend mode

\* The NTI USB-A+A-5M Improved Active USB 5 Meter Extension functions with **ALL** USB Windows, Sun, and Mac platforms without error whether the NTI USB-A+A-5M Improved Active USB 5 Meter Extension is connected at startup or hot-plugged while the CPU is in use.

## Features

- MAC keyboard Power-ON feature
- Cascading NTI USB-A+A-5M Improved Active USB 5 Meter Extensions (with limitations- see Limitations below)

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## Limitations

The USB-A+A-5M Improved Active USB 5 Meter Extension does not support the suspend mode available with some PC, SUN, and MAC operating systems and device drivers. The current draw from the bus power will be up to 150mA even when there is no activity on the bus. If problems are experienced during system sleep or hibernate, or at wake-up, then set the USB port properties to not use suspend mode.

The maximum application extension length of USB cable using the USB-A+A-5M Improved Active USB 5 Meter Extension can be determined as follows:

$$((\text{Number of active USB-A+A-5M Improved Active USB 5 Meter Extensions}) \times 150\text{mA}) + \text{device current draw} \leq (\text{less than or equal to}) 500\text{mA}$$

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## Materials

### Materials Supplied with this kit:

- NTI USB-A+A-5M Improved Active USB 5 Meter Extension
- This installation guide

## Installation

- **Using one (1) USB-A+A-5M Improved Active USB 5 Meter Extension**

1. Connect the USB type A male connector of the USB-A+A-5M Improved Active USB 5 Meter Extension to a USB type A female port on a CPU or other USB host.
2. Connect a USB device to the USB type A female connector on the USB-A+A-5M Improved Active USB 5 Meter Extension labeled "USB DEVICE".

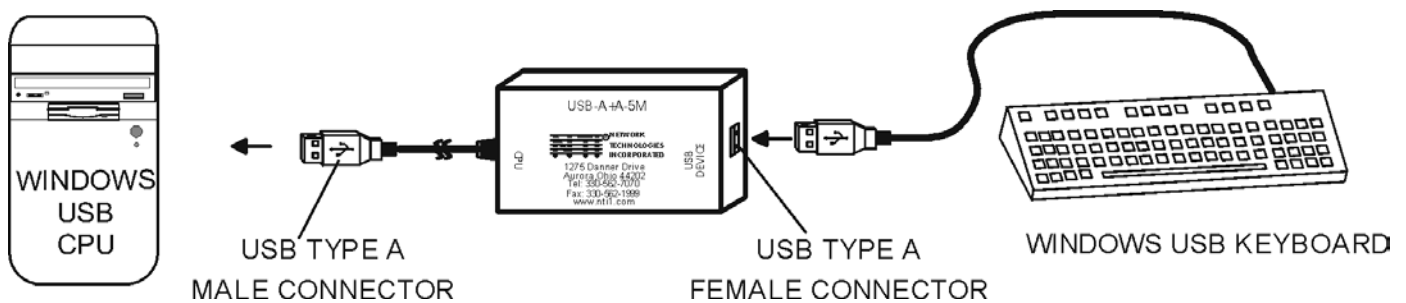


Figure 1- Common Application

- **Using two (2) or three (3) USB-A+A-5M Improved Active USB 5 Meter Extension (cascading)**

1. Connect the USB type A male connector of one USB-A+A-5M USB extension cable to a USB type A female port on a CPU or other USB host.
2. Connect the USB type A male connector of another USB-A+A-5M Improved Active USB 5 Meter Extension to the USB type A female port on the first USB-A+A-5M Improved Active USB 5 Meter Extension.
3. If the application permits it (as shown in Fig. 2), connect a third USB-A+A-5M Improved Active USB 5 Meter Extension to the second USB-A+A-5M Improved Active USB 5 Meter Extension. Use the following formula to verify if the application will allow the use of more than one USB-A+A-5M Improved Active USB 5 Meter Extension:

$$\text{Number of active USB-A+A-5M} \times 150\text{mA} + \text{device current draw} \leq (\text{less than or equal to}) 500\text{mA}$$

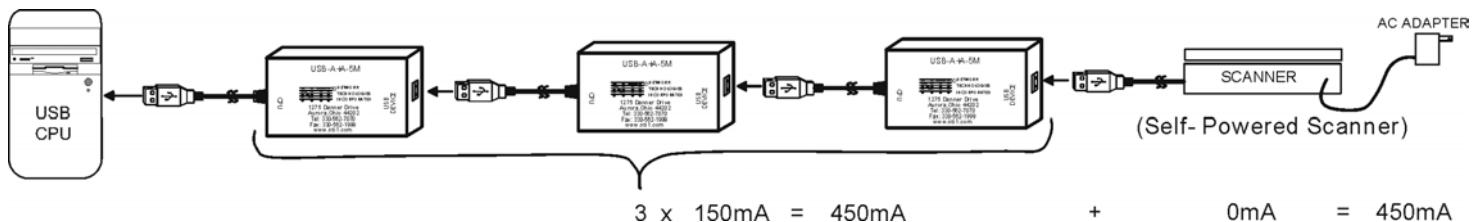


Figure 2- Cascading USB-A+A-5M Improved Active USB 5 Meter Extensions

4. Connect a USB device to the USB type A female connector on the last USB-A+A-5M Improved Active USB 5 Meter Extension at the connector labeled "USB DEVICE".

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## Product Specifications

| Description        | Specification                             |
|--------------------|-------------------------------------------|
| Length             | 5m                                        |
| Incoming Connector | USB type A- female                        |
| Outgoing Connector | USB type A- male                          |
| Signal Delay       | <60ns                                     |
| Current Draw       | 150mA (bus powered)                       |
| USB specification  | 1.1 (low speed and full speed compatible) |

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## Troubleshooting

| Problem            | Cause                                                                                      | Solution                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Device not working | <ul style="list-style-type: none"><li>Not connected properly</li></ul>                     | <ul style="list-style-type: none"><li>Check connections, make sure all connectors are fully inserted</li></ul>                |
|                    | <ul style="list-style-type: none"><li>Self-powered device not connected to power</li></ul> | <ul style="list-style-type: none"><li>Plug AC adapter for self-powered device into power source</li></ul>                     |
|                    | <ul style="list-style-type: none"><li>Power overload- too many extension cables</li></ul>  | <ul style="list-style-type: none"><li>Use formula under Limitations on page 1 to determine if application will work</li></ul> |

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USB-A+A-5M

SERIAL NO.: \_\_\_\_\_

DATE: \_\_\_\_\_ INSPECTED BY: \_\_\_\_\_