NetBotz CAT 5 Pod Extender

This manual is intended to assist you in the process of installing the NetBotz CAT 5 Pod Extender (1 Port or 4 Port model). The instructions in this guide assume a knowledge of computer installation procedures, familiarity with cabling requirements, and some understanding of USB devices.

CAT 5 Pod Extender Product Contents

Your NetBotz CAT 5 Pod Extender package should include the following items:
- NetBotz CAT 5 Pod Extender User's Guide (this publication)
- CAT 5 Pod Extender Local Module
- CAT 5 Pod Extender Remote Module
- AC power adapter (optional)
- USB cable (2m long)

To complete the installation, you will also need the following items that are not included with the product:
- NetBotz 500 or NetBotz 420 appliance
- Category 5 Unshielded Twisted Pair (UTP) cable with two RJ-45 connectors (if using surface cabling)

    OR

    Category 5 UTP cabling with two information outlets and two Category 5 UTP patch cords with RJ-45 connectors (if using premise cabling)

> ⓘ **Note**
> The maximum length of the Category 5 UTP cable, including patch cords, must not exceed 100m.

- 1 NetBotz Camera Pod 120, or 1 or more NetBotz Sensor Pod 120s. If connecting more than one pod to a 1 Port model, you will also need at least one unpowered or self-powered USB hub.

About the NetBotz CAT 5 Pod Extender

The CAT 5 Pod Extender enables you to deploy NetBotz Camera Pod 120s or NetBotz Sensor Pod 120s at a distance greater than the typical the five-meter limit for USB peripheral devices. With the CAT 5 Pod Extender, your pods can be located up to 100 meters from the NetBotz 500 or NetBotz 420 appliance. In addition, the CAT 5 Pod Extender can supply power to remote pods.

- The 1 Port model can supply power to one NetBotz Camera Pod 120, one NetBotz Sensor Pod 120, or an unpowered USB hub to which up to 4 NetBotz Sensor Pod 120s can be connected.
- The 4 Port model can supply power to up to 4 NetBotz Sensor Pod 120s.
- You can also use daisy chained self-powered USB hubs to connect a NetBotz Camera Pod 120 or more than 4NetBotz Sensor Pod 120s to either a 1 Port or 4 Port Model.

The CAT 5 Pod Extender is composed of two individual modules: The Local Module and the Remote Module.

The Local Module

The Local Module connects to the NetBotz 500 or NetBotz 420 appliance using a conventional USB cable and, depending on your needs, to a power outlet through an AC power adapter.

> **(!) Note**
> The power adapter for the CAT 5 Pod Extender can be connected to either the Local Module or to the Remote Module, whichever is more convenient.

The Remote Module

The Remote Module connects to the Camera Pod 120 or Sensor Pod 120 using a conventional USB cable and, depending on your needs, to a power outlet through an AC adapter. The Remote Module allows you to connect one USB device, such as a NetBotz Camera Pod 120, NetBotz Sensor Pod 120, or USB hub to which additional devices (such as one Camera Pod 120 with one or more Sensor Pod 120s) will be connected.

Connecting the Local Module to the Remote Module

The Local Module and Remote Module are interconnected by up to 100m of Category 5 Unshielded Twisted Pair (UTP) cabling. The UTP cabling must have a straight through conductor configuration with no crossover and must be terminated with 8-conductor RJ-45 connectors at both ends.

> **(!) Note**
> Category 5 UTP cabling is the standard data communications cable installed in most commercial and some residential buildings.

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 on a computer or hub. The Type B connector is used to attach the USB cable to a USB device.

Power Handling

Some USB devices are powered directly from the USB and do not require individual power supplies. These devices are called bus-powered devices. The CAT 5 Pod Extender can provide power to these devices so they can be operated remotely.

Bus-powered devices are further divided into low-power and high-power categories. NetBotz Sensor Pod 120s are low-power devices., while the NetBotz Camera Pod 120 is a high-power device. The CAT 5 Pod Extender can supply the necessary power to either low-power or high-power devices that connected to the Remote Module when the AC power supply is connected to either the Local Module or the Remote Module.

Note

- Connecting more than one NetBotz Camera Pod 120 to a single CAT 5 Pod Extender places a significant burden on the bandwidth of the USB port and will reduce the maximimum image capture rate for all cameras connected to the port.
- If you will be connecting more than one NetBotz Camera Pod 120s to a 4 Port model, or connecting a self-powered hub to a 1 Port model and then connecting mulitple NetBotz Camera Pod 120s to the hub, you must connect the power supply to the Remote Module.
- Depending on the length of CAT 5 cable between the Local Module and the Remote Module, you might notice some reduction in the maximum image capture rate of any NetBotz Camera Pod 120s connected to a Remote Module.

Before You Begin

Before you can install the CAT 5 Pod Extender, you need to prepare your site.

1. Determine where the NetBotz 500 or NetBotz 420 appliance is to be located and set up the appliance.
2. Determine where you want to deploy your pod or pods.
3. Decide whether you want to connect the power adapter to the Local Module or to the Remote Module.
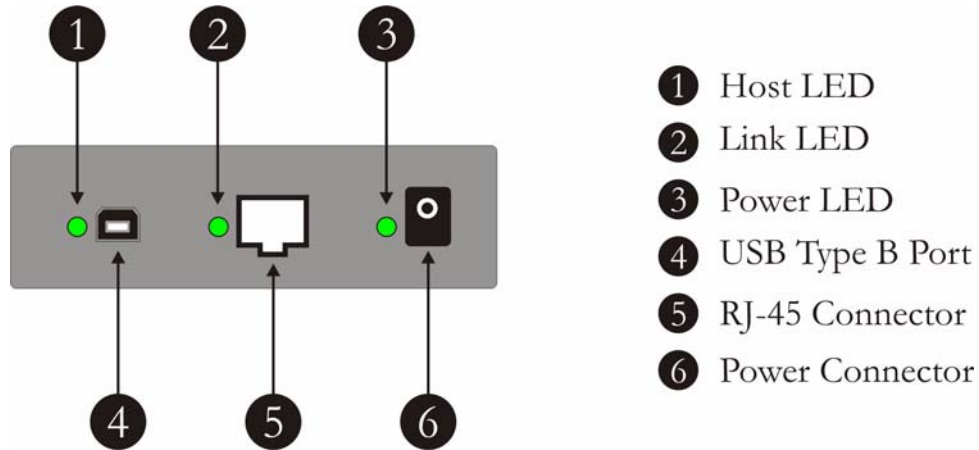4. If you are using surface cabling, ensure you have enough Category 5 UTP cabling to connect the two locations.

   OR

   If you are using premise cabling, ensure Category 5 UTP cabling is installed between the two locations with Category 5 information outlets located near both the computer and the USB device(s).

Install the Local Module

1. Place the Local Module near the NetBotz appliance.
2. Plug the Type B connector on the USB cable (included) into the USB Type B Port on

the Local Module.

① Host LED
② Link LED
③ Power LED
④ USB Type B Port
⑤ RJ-45 Connector
⑥ Power Connector

3. If the power adapter is to be located with the Local Module:

    a. Plug the power adapter into a suitable AC outlet.

    b. Connect the power adapter to the Power Connector on the Local Module.

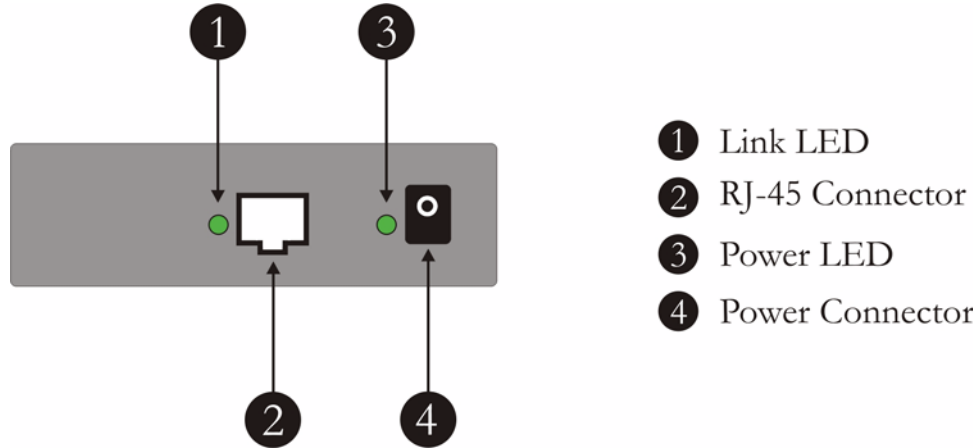4. Plug the Type A connector on the USB cable into a USB port on the NetBotz appliance.

Install the Remote Module

1. Place the Remote Module near the pod.

2. Using a USB cable, plug the USB Type B connector into the pod, and then plug the USB Type A connector into a USB Type A Port on the Remote Module (1 Port model shown below).

① USB Port LED
② USB Type A Port

3. If the power adapter is to be located with the Remote Module:

a. Plug the power adapter into a suitable AC outlet.

b. Connect the power adapter to the Power Connector on the Remote Module.

Connect the Remote Module to the Local Module

> **Note**
>
> To ensure proper operation, we recommend that only Category 5 Unshielded Twisted Pair (UTP) cabling be used to connect the Local Module to the Remote Module. The UTP cabling must have a straight through conductor configuration with no crossover and be terminated with 8 conductor RJ-45 connectors at both ends.

With Surface Cabling

1. Plug one end of the Category 5 UTP cabling (not included) into the RJ-45 connector on the Local Module.
2. Plug the other end of the Category 5 UTP cabling into the RJ-45 connector on the Remote Module.

With Premise Cabling

1. Plug one end of a Category 5 patch cord (not included) into the RJ-45 connector on the Local Module.
2. Plug the other end of the patch cord into the Category 5 information outlet near the NetBotz appliance.
3. Plug one end of the second Category 5 patch cord (not included) into the RJ-45 connector on the Remote Module.
4. Plug the other end of the second patch cord into the Category 5 information outlet near the pod.

> **Note**
>
> The maximum length of the Category 5 UTP cable, including patch cords, must not exceed 100m.

Check the Installation

To ensure that your CAT 5 Pod Extender has been installed correctly, check that the following indicator LEDs are illuminated:

- Power indicators on both the Remote and Local Modules
- Link indicators on both the Remote and Local Modules
- Host indicator on the Local Module
- USB Port indicators on the ports in use on the Remote Module

Troubleshooting

Symptoms/Cause	Remedy
LEDs on the Remote Module or Local Module are not lit. **Cause:** The CAT 5 Pod Extender is not receiving power.	Ensure the power adapter is securely connected to either the Local Module or Remote Module as appropriate and to a proper local power supply outlet.
Link LEDs on the Local Module and Remote Module are not lit. **Cause:** The connection between the Local Module and Remote Module is not correct.	Ensure that the proper Category 5 UTP cable with straight through conductors is connected between the Remote Module and Local Module.
Host LED on the Local Module and the USB LED on the Remote Module are not lit. **Cause:** a. The link between the Local Module and the NetBotz appliance is not correct. b. The NetBotz appliance is not functioning. c. The NetBotz appliance does not recognize the CAT 5 Pod Extender.	1. Ensure all cables are securely connected. 2. Remove and then reconnect the power adapter to the CAT 5 Pod Extender. 3. Restart the NetBotz appliance.
USB port LED on Remote Module is not lit. **Cause:** a. Connection between the pod and the Remote Module is not correct. b. The pod is malfunctioning. c. The CAT 5 Pod Extender is malfunctioning.	1.Ensure the pod is securely connected to the USB port on the Remote Module. If the USB port LED on the Remote Module is still not lit: 2.Disconnect the CAT 5 Pod Extender from the NetBotz appliance. 3.Connect the pod directly to the USB port on the NetBotz appliance. 4.If the pod is functioning properly when connected directly to the NetBotz appliance: a.Connect another pod (of a different type) to the CAT 5 Pod Extender. b.If the second pod does not work, the CAT 5 Pod Extender may be malfunctioning. Contact Technical support for assistance. **OR** 5.If the pod does not function properly when connected directly to the NetBotz appliance, the pod may be malfunctioning. Contact Technical support for assistance.

Symptoms/Cause	Remedy

LEDs on the Remote Module and Local Modules are lit, but a pod does not work.
 	
Cause:
  a. The pod is malfunctioning.
  b. The CAT 5 Pod Extender is malfunctioning.
	1.Disconnect the CAT 5 Pod Extender from the NetBotz appliance.
	2.Connect the pod directly to a USB port on the NetBotz appliance.
	3.If the pod does not function properly when connected directly to the NetBotz appliance, the pod may be malfunctioning. Contact Technical support for assistance.
	OR
	4.If the device is functioning properly when connected directly to the computer:
	  a.Connect another pod (of a different type) to the CAT 5 Pod Extender.
	  b.If the second pod does not work, the CAT 5 Pod Extender may be malfunctioning. Contact Technical support for assistance.

Specifications

Item	CAT 5 Pod Extender
Range (over Category 5 UTP)	100 meters
Host cable (USB)	Type A/B 2m
Local Module connector (UTP)	1 x RJ-45
Local Module connector (USB)	1 x USB Type B
Remote Module connector (UTP)	1 x RJ-45
Remote Module connector (USB)	1 x USB Type A
Local Module/Remote Module power adapter	15V DC 1A
USB power at Remote Module	Powered at Local Module = 1 x 500mA / Powered at Remote Module = 1 x 500mA
Local Module dimensions (overall)	107 x 83.8 x 34 mm
Remote Module dimensions (overall)	107 x 83.8 x 34 mm
Temperature range	4°C to 40°C
USB Speeds	1.5 Mbps and 12 Mbps
Link cable	Category 5 UTP (8 conductor) **Note:** Must be Category 5 UTP (or better). UTP cabling must have a straight through conductor configuration with no crossover and terminated with 8-conductor RJ-45 at both ends.

Certifications

The CAT 5 Pod Extender has been certified to the following standards:
- FCC Part 15 Class A
- CE
- USB-IF

Compatibility

The CAT 5 Pod Extender complies with all USB 1.1 specifications. However, NetBotz Inc.. does not guarantee that all USB devices are compatible with the CAT 5 Pod Extender.

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