CheetaHub Classic-2040
Smart Ethernet Hub
with 8 10BASE-T (RJ-45) Ports and 1 BNC Port
Introduction

The CheetaHub Classic-2040 includes 8 RJ-45 ports and 1 BNC port for connection to thin Ethernet (10BASE2). The hub also has an indicator panel that includes utilization and link/traffic LEDs to provide easy monitoring of hub conditions. This guide contains all the information required to install and operate the hub.

Package Contents

Your CheetaHub Classic-2040 package includes:
- CheetaHub Classic-2040 (Model No. EN2040) Ethernet hub with 8 RJ-45 ports and 1 BNC port
- Four rubber foot pads
- Quick Installation Guide
- Power adapter
- Owner registration card
- T-type BNC connector

Description of Hardware

This hub contains 8 RJ-45 Ethernet ports and 1 BNC port. It also includes an RJ-45 daisy-chain port (used instead of Port 8) for linking to another compatible hub or switch using straight-through twisted-pair cable.

The following figure shows the components of this hub:

Mounting the Hubs

This hub can be placed directly on your desktop, or mounted on a wall or partition. Before you start installing the hub, make sure you can provide the right operating environment, including power requirements, sufficient physical space, and proximity to other network devices that are to be connected. Verify the following installation requirements:

- Power requirements: 7.5 - 12 VAC at 50 to 60 Hz (±3Hz). The power adapter will be suitable for the input voltage level in your area.
- The hub should be located in a cool dry place, with at least 10 cm. (4 in.) of space at the front and back for ventilation.
- Place the hub out of direct sunlight, and away from heat sources or areas with a high amount of electromagnetic interference.
- Check if network cables and connectors needed for installation are available.
The CheetaHub can be located anywhere there is enough flat space, such as on a table or desktop.

1. Stick the self-adhesive rubber foot pads (that come with this package) on each of the 4 concave spaces located on the bottom of the hub.
2. Place the hub on a firm flat surface or mount it on a partition or wall.
3. If you need to stack the hub, repeat step 1 for each hub before stacking them.

The rubber foot pads cushion against shock/vibrations and provide space between each hub for ventilation.

Connecting the Hub

This hub has 8 RJ-45 ports on the front panel and one BNC port on the rear panel that support connection to standard 10 Mbps Ethernet. The RJ-45 (MDI-X) station ports allow you to make connections to devices such as a workstation, server or router; while the BNC port permits attachment to a thin Ethernet segment (10BASE2). If you need to cascade to another compatible hub or switch, just run a connection from the (MDI) daisy-chain port on the hub to an MDI-X port on the other device.

Making a Connection via an MDI-X Station Port

You can connect any RJ-45 (MDI-X) station port on the hub to any device that uses a standard network interface such as a workstation or server, or to a network interconnection device such as a bridge or router (depending on the port type implemented).

1. Prepare the network devices you wish to network. Make sure you have installed 10BASE-T network interface cards for connecting to the hub’s RJ-45 (MDI-X) station ports. You also need to prepare straight-through shielded or unshielded twisted-pair cables with RJ-45 plugs at both ends. Use 100Ω Category 3, 4 or 5 cable for all connections.
2. Connect one end of the cable to the RJ-45 port of the network interface card, and the other end to any available (MDI-X) station port on the hub. When inserting an RJ-45 plug, ensure the gap on the plug clips into position to ensure that it is properly seated. When using the hub in a stand-alone configuration, you can network up to 8 end nodes, in addition to making an additional connection via the BNC port.

Do not plug a phone jack connector into any RJ-45 port. This may damage the hub. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

Notes: 1. Make sure each twisted-pair cable does not exceed 100 meters (328 feet).
2. If you need to cascade to another compatible hub or switch, run a connection from the (MDI) daisy-chain port on the hub to an MDI-X port on the other device. If you must cascade to another hub or switch using MDI-X ports at both ends, then use crossover cable.

Making a Connection via the BNC Port

Plug a BNC T-type connector into the BNC port on the back of the hub. When connecting two devices via BNC ports, there should be at least 0.5 meters (1.64 feet) of coaxial cable between the two BNC ports. A thin Ethernet coaxial cable segment can be extended up to 185 meters (607 feet) and can link up to 30 nodes. If the unit is at the terminal end of a trunk segment, connect a 50Ω terminator to the open end of the “T” connector.

Powering on the Hub

1. Plug the power cord into the power socket at the rear of the hub, and the adapter into a power outlet.
2. Check the LED marked Power on the front panel to see if it is on.

Note: The unit supports a “hot remove” feature which permits you to connect/disconnect cables without powering off the hub and without disrupting the operation of the devices attached to the hub.

Verifying Port Status

Check each connection by viewing the port status indicators shown in the following figure and table.

<table>
<thead>
<tr>
<th>BNC Traffic</th>
<th>Collision</th>
<th>Utilization%</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Flashing</td>
<td>On</td>
<td>Off</td>
</tr>
<tr>
<td>Traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utilization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Link/Traffic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Verifying System Operation

Verify that all connected devices have a valid connection. The hub monitors the link status for each port. If any device is properly connected to the hub and transmitting a link beat signal, the Link indicator will light up for the corresponding port. If the Link indicator fails to light when you connect a device to the hub, check the following items:

- Be sure all network cables and connectors are properly attached to the connected device and the hub.
- See if your cable is functioning properly by using it for another port and attached device that displays valid indications when connected to the network.
- Verify that you have not exceeded the specified limits for any attached media type as summarized in the following table:

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Max Length</th>
<th>Max Nodes</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twisted Pair</td>
<td>100 meters</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Thin Ethernet</td>
<td>185 meters</td>
<td>30</td>
<td>0.5 meters</td>
</tr>
</tbody>
</table>

1- Minimum distance between nodes (0 meters = 1.64 feet).
Quick Installation Guide

CheetaHub Classic-2040

If a computer is attached to the hub, verify that its adapter card is functioning properly by trying it in another computer that has been successfully connected to the network.

Applications

This hub provides up 8 RJ-45 ports for standard twisted-pair connections and 1 BNC port for connecting to thin Ethernet. The hub can also be easily cascaded to another hub or switch using the daisy-chain port.

Stand Alone - This hub can be used in a simple stand-alone configuration. In compliance with Ethernet standards, the maximum cable distance between the hub and workstation is 100 meters.

Using the Daisy-Chain Port - This hub provides an (MDI) daisy-chain port that you can easily use to connect to another hub or switch.

Using the BNC Port - This hub can also be stacked with other hubs using the BNC port. Through this port, hubs can be connected via thin coaxial cable.

Guidelines for Multiple Hub Configuration - In a multiple hub configuration, the maximum limit between 2 workstations is 5 cable segments and 4 hubs. However, to control the number of hubs in a path, we recommend using one hub to connect to several other hubs. Also remember to make sure there is only one path between any 2 stations on the network.

Product Specifications

Access Method CSMA/CD, 10 Mbps
Standards Conformance IEEE 802.3 10BASE-T, 10BASE2
Communication Rate 10 Mbps
Media Supported 10BASE-T - 100Ω Category 3,4,5 twisted-pair, 10BASE2 - thin Ethernet coaxial cable
Number of Ports 8 10BASE-T ports and 1 BNC port
Indicator Panel LEDs for utilization, collision, link/traffic
Dimensions 200 x 110 x 26.8 mm (7.87 x 4.33 x 1.06 in)
Weight 0.556 kg (1.22 lb)
Input Power Power adapter 7.5V ~ 12V AC, 50 to 60 Hz
Power Consumption 8VA at 100/120/220-230/240 V
Heat Dissipation 27.3 BTU/hr

Temperature 0°C to 40°C (32 to 104°F) Standard Operating
Humidity 5% to 95% (Noncondensing)
Certification CE Mark
Emissions FCC Class A, VCCI Class A, CISPR 22 Class A
Immunity IEC 1000-4-2/3/4/6
Safety UL, CSA, TÜV/GS

Troubleshooting

Diagnosing Hub Indicators

The hub can be easily monitored through panel indicators to assist the network manager in identifying problems. This section describes common problems you may encounter and possible solutions.

Symptom: Link indicator does not light up (green) after making a connection.
Cause: Network interface (e.g., a network adapter card on the attached device), network cable, or hub port is defective.
Solution: Verify that the hub and attached device are powered on. Be sure the cable is plugged into both the hub and corresponding device. Verify that the proper cable type is used and its length does not exceed specified limits (100m or 328ft). Check the adapter on the attached device and cable connections for possible defects. Replace the defective adapter or cable if necessary.

Symptom: Power indicator does not light up (green) after power on.
Cause: Defective power outlet, power cord, or power adapter.
Solution: Check the power outlet by plugging in another device that is functioning properly. Check the power cord with another device. If these measures fail to resolve the problem, replace the unit's power adapter.

Power and Cooling Problems

If the Power indicator does not turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or power adapter as explained in the previous section. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet. If you still cannot isolate the problem, then the power adapter may be defective. In this case, contact your Accton distributor for assistance.

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (e.g., the power adapter or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.
Quick Installation Guide

Port and Cable Assignments

RJ-45 Port Description
RJ-45 station ports (MDI-X) can be attached to any devices which use a standard network interface (e.g., a workstation, server, bridge or router). Similar networking devices (e.g., another hub or switch) can be cascaded by connecting the (MDI) daisy-chain port on the hub to an (MDI-X) RJ-45 port on the other device. Use unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for RJ-45 connections: 100Ω Category 3, 4 or 5 cable for 10 Mbps connections or 100Ω Category 5 cable for 100 Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

<table>
<thead>
<tr>
<th>Pin</th>
<th>Assignment (Station Ports 1 - 8)</th>
<th>Assignment (Daisy-Chain Port, other device)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Input Receive Data +</td>
<td>Output Transmit Data +</td>
</tr>
<tr>
<td>2</td>
<td>Input Receive Data -</td>
<td>Output Transmit Data -</td>
</tr>
<tr>
<td>3</td>
<td>Output Transmit Data +</td>
<td>Input Receive Data +</td>
</tr>
<tr>
<td>4,5,7,8</td>
<td>Not Used</td>
<td>Not Used</td>
</tr>
</tbody>
</table>

Schematics for both straight and crossover twisted-pair cable are shown below.

BNC Port Description
The BNC Port can be attached to a thin Ethernet segment (10BASE2).

EMI Certification

FCC Class A (USA)
Warning: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are required to correct the interference. You may use unshielded twisted-pair (UTP) for RJ-45 connections - Category 3 or greater.

Class A (Canada Department of Communications)
This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications. Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par le ministère des Communications.

VCCI Class A Compliance (Japan)

CE Mark Declaration of Conformance for EMI and Safety (EEC)
This is to certify that this product complies with ISO/IEC Guide 22 and EN45014. It conforms to the following specifications:

<table>
<thead>
<tr>
<th>EMC</th>
<th>EN55022(1988)/CISPR-22(1985) class A</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN60555-2(1995)</td>
<td>class A</td>
</tr>
<tr>
<td>EN60555-3</td>
<td></td>
</tr>
<tr>
<td>IEC1000-4-2(1995)</td>
<td>4kV CD, 8kV AD</td>
</tr>
<tr>
<td>IEC1000-4-3(1995)</td>
<td>3V/m</td>
</tr>
<tr>
<td>IEC1000-4-4(1995)</td>
<td>1kV - (power line), 0.5kV - (signal line)</td>
</tr>
<tr>
<td>IEC1000-4-6(1995)</td>
<td>3Vrms</td>
</tr>
</tbody>
</table>

This product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Warning! Do not plug a phone jack connector in the RJ-45 port. This may damage this device. Les raccordeurs ne sont pas utilisés pour le système téléphonique!

Safety Compliance

Underwriters Laboratories Inc. (USA)

Important! Before making connections, make sure you have the correct Cord Set. Check it (read the label on the cable) against the following specification list.

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Cord Set Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 Volts</td>
<td>UL Listed/CSA Certified Cord Set</td>
</tr>
<tr>
<td></td>
<td>Minimum 18 AWG: type SVT or SJT three conductor cord</td>
</tr>
<tr>
<td></td>
<td>Parallel blade, grounding type attachment plug rated 15A, 125V</td>
</tr>
<tr>
<td>240 Volts (North America)</td>
<td>UL Listed/CSA Certified Cord Set</td>
</tr>
<tr>
<td></td>
<td>Minimum 18 AWG: type SVT or SJT three conductor cord</td>
</tr>
<tr>
<td></td>
<td>Maximum length of 15 feet</td>
</tr>
<tr>
<td></td>
<td>Tandem blade, grounding type attachment plug rated 15A, 125V</td>
</tr>
<tr>
<td>240 Volts (Europe only)</td>
<td>Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm²</td>
</tr>
<tr>
<td></td>
<td>IEC-320 receptacle: male plug rated 10A, 250V</td>
</tr>
</tbody>
</table>
Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssig oder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
   a. Netzkabel oder Netzstecker sind beschädigt.
   b. Flüssigkeit ist in das Gerät eingedrungen.
   c. Das Gerät war Feuchtigkeit ausgesetzt.
   d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
   e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
   f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8V, 50-60Hz nicht über oder unterschreiten sowie den minimalen Strom von 1A nicht unterschreiten.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

Warranty

Accton warrants to the original owner that the product delivered in this package will be free from defects in material and workmanship for the lifetime of the product. For the warranty to apply, you must register your purchase by returning the registration card indicating the date of purchase and including proof of purchase. There will be a minimal charge to replace consumable components, such as fuses, power transformers, and mechanical cooling devices. The warranty does not cover the product if it is damaged in the process of being installed.

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