

Intel Express 10/100 Stackable Hub

User Guide



intel[®]

This guide covers the following products:

Intel Express 10/100 Stackable Hub - 12-port TX hub. Product code EE110TX12.

Intel Express 10/100 Stackable Hub - 24-port TX hub. Product code EE110TX24.

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Intel Corporation, 5200 NE Elam Young Parkway, Hillsboro OR 97124-6497

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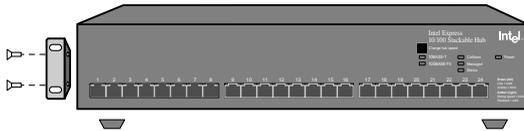
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Quick Start

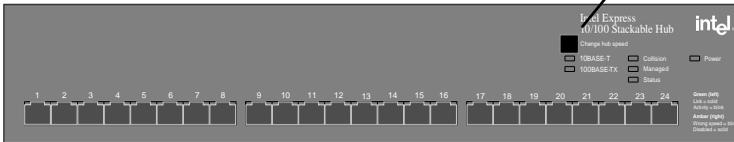
1. Install the Express 10/100 Stackable Hub in a rack or on a shelf or table, plug it in, and turn the power on.



Rack: Use the four small screws to attach the brackets to the hub. Use the four large screws (not shown) to attach the hub to the rack.

Shelf: Attach the four rubber feet to the bottom before placing on a shelf or table.

2. Connect either 100BASE-TX devices *or* 10BASE-T devices to the ports.



The default hub speed is 100 Mbps. Press Change Hub Speed to operate at 10 Mbps.

All ports operate at the same speed

For this connection

- Hub to server or workstation
- Hub to print server
- Hub to switch
- Hub to hub (10 Mbps only)

Use this cable

- Straight-through TPE
- Straight-through TPE
- Crossover TPE
- Crossover TPE

Use Category 5 (CAT 5) twisted-pair Ethernet (TPE) cabling for 100 Mbps connections. Use CAT 3, 4, or 5 TPE for 10 Mbps connections.

Cable distance can't exceed 100 meters whether running at 10 or 100 Mbps.

Do not configure attached devices for full-duplex. Hubs aren't capable of full-duplex.

3. Check the LEDs for links. You're done.

On solid indicates a valid link (may take up to 6 seconds). Blinking indicates activity on the port.

Green LED (left side)



Amber LED (right side)

Should normally be off. Blinking indicates a speed mismatch. For example, the hub is operating at 100 Mbps, but a 10 Mbps device is connected to the port. See pages 10-11 for detailed descriptions.

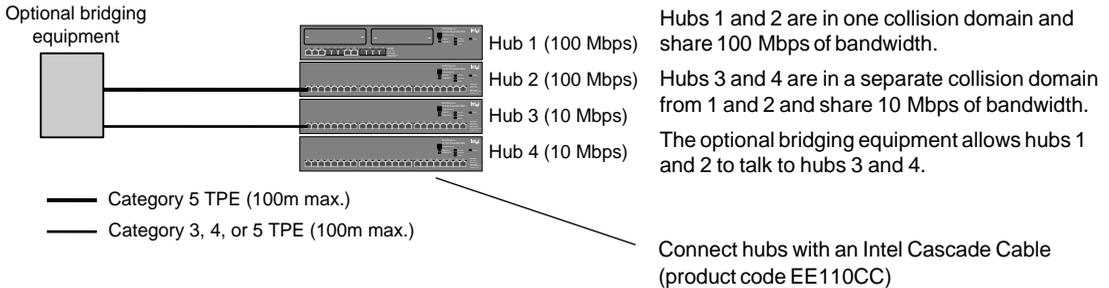
Next steps (Optional)

Continue to the next page if you want to connect multiple hubs.

(Optional) Connecting multiple hubs

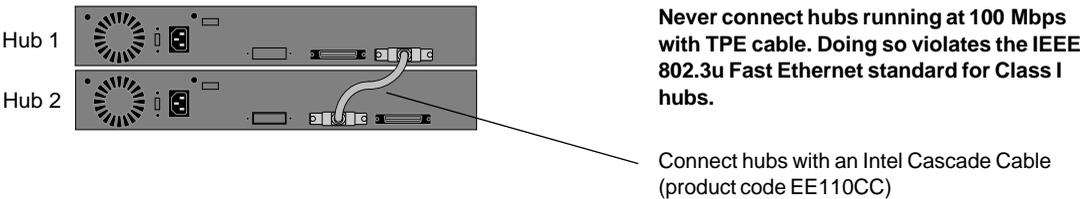
Connecting hubs running at 100 Mbps to hubs running at 10 Mbps

Use an Intel Cascade Cable to connect the hubs. Hubs running at 100 Mbps can talk to each other, and hubs running at 10 Mbps can talk to each other. However, hubs running at 100 Mbps can't talk to hubs running at 10 Mbps without bridging equipment. See pages 5-7 for more information.



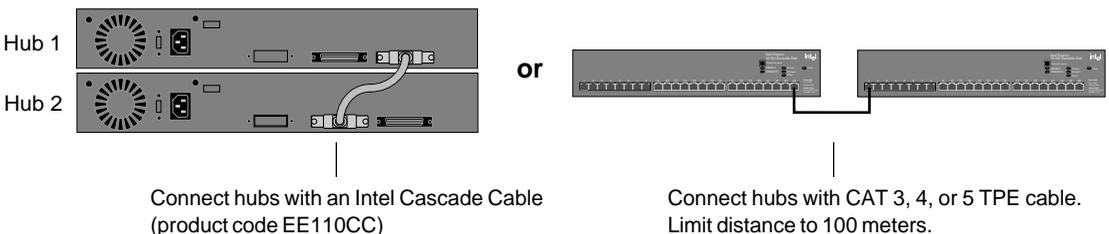
Connecting hubs running at 100 Mbps

Use an Intel Cascade Cable to connect the hubs. You can connect a maximum of eight hubs. See page 4 for more information.



Connecting hubs running at 10 Mbps

Use an Intel Cascade Cable to stack the hubs or daisy-chain the hubs with TPE cable. All hubs in a stack share 10 Mbps of bandwidth and count as one repeater hop. Hubs connected with TPE cable count as two repeater hops. See page 4 for more information.



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Overview

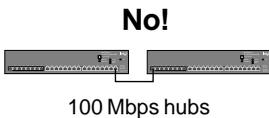
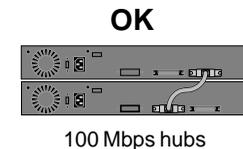
This guide covers both the 12- and 24-port versions of the Intel Express 10/100 Stackable Hub.



- Intel product code: EE110TX12
 - 12 fixed TPE ports
 - Stack eight hubs (mixed 12- or 24-port)
 - Hub management through optional Management Module (product code EE110MM)
 - Bridging or full-duplex support through optional Ethernet Module (product code EE110EM)
 - 100BASE-FX support through optional Fiber Module (product code EE110FX)
- Intel product code: EE110TX24
 - 24 fixed TPE ports
 - Stack eight hubs (mixed 12- or 24-port)
 - Hub management requires a 12-port 10/100 Stackable Hub in same stack

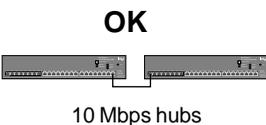
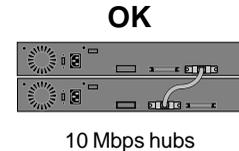
Connection Guidelines

Connecting 100BASE-TX devices



- Use Category 5 twisted-pair Ethernet (CAT 5 TPE) cable.
- Always limit the distance between devices connected with TPE cable to 100 meters (the IEEE specification requires this).
- Use a crossover cable to connect the hub to a switch. Use a straight-through cable to connect the hub to a server or workstation. See pages 12-13 for more information on cabling.
- Never connect two hubs operating at 100 Mbps with TPE cabling (this violates the IEEE 802.3u Fast Ethernet specification for Class I hubs). You must use an Intel Cascade Cable.
- Never connect a device to the hub at full-duplex. Only the optional Ethernet Module or Fiber Module supports full-duplex.

Connecting 10BASE-T devices



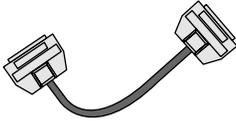
- Use Category 3, 4, or 5 twisted-pair Ethernet (CAT 3, 4, or 5 TPE) cable.
- Use a crossover cable to connect a hub to another hub or a switch. Use a straight-through cable to connect a hub to a server or workstation. See pages 12-13 for more information on cabling.
- Follow the 5-4-3-2-1 general rule when daisy-chaining 10 Mbps hubs. See page 9 for more information.
- Always limit the distance between devices connected with TPE cable to 100 meters (the IEEE specification requires this).
- Use an Intel Cascade Cable to connect hubs when:
 - you want all hubs in the stack to count as a single repeater.
 - you want to use a single Management Module to manage all hubs in the stack.
- Never connect a device to the hub at full-duplex. Only the optional Ethernet Module or Fiber Module supports full-duplex.

NOTE

The acronym TPE (twisted-pair Ethernet) refers to Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling or Category 5 shielded twisted-pair (STP) cabling.

NOTE

You must use an Intel Cascade Cable to connect hubs running at 100 Mbps. Do not daisy-chain hubs with TPE crossover cabling.



Intel Cascade Cable
(product code EE110CC)

NOTE

In a managed stack of hubs, the optional Management Module can communicate with all hubs, regardless of speed.

The Ethernet Module acts as a switch port plugged into a hub. It has the added benefit of connecting to a switch or server configured at full-duplex.

This is the only time you can connect an Express 10/100 Stackable Hub to a device at full-duplex.

Example Configurations

Mixed 10 Mbps and 100 Mbps environment

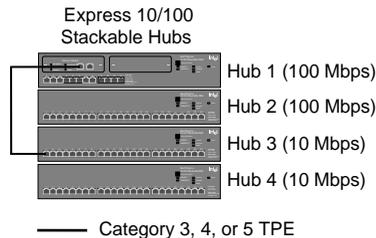
A stack of Express 10/100 Stackable Hubs can contain hubs running at both 10 and 100 Mbps. However, the hubs running at 10 Mbps and the hubs running at 100 Mbps are on separate network segments. These two segments can't communicate with each other unless you use another device to bridge them.

There are several ways to bridge the 10 Mbps and 100 Mbps segments:

- Use the optional Intel Express Stackable Hub Ethernet Module (product code EE110EM).
- Use a switch capable of both 10 Mbps and 100 Mbps operation, such as the Intel Express 10/100 Fast Ethernet Switch (product code ES101TX).
- Use a server with two 10/100 adapters installed.
- Use the Intel Express 10/100 Downlink (product code EC100DL).
- Use a router capable of both 10 Mbps and 100 Mbps operation (not described here).

Bridging with the Intel Express Stackable Hub Ethernet Module (sold separately)

The Ethernet Module plugs into the expansion slot of a 12-port hub running at either 10 Mbps or 100 Mbps. Simply plug the module into a hub running at one speed and connect to a hub running at the other speed, and the Ethernet Module bridges the two collision domains.



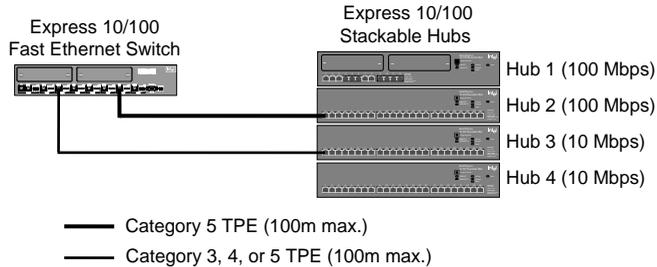
If you plug the Ethernet Module into a hub running at 100 Mbps, connect it to a hub running at 10 Mbps with CAT 3, 4, or 5 TPE.

If you plug the Ethernet Module into a hub running at 10 Mbps, connect it to a hub running at 100 Mbps with CAT 5 TPE.

The benefits of the switch are its port density (eight base ports expandable to 12), performance, and manageability.

Bridging with the Express 10/100 Fast Ethernet Switch

A switch with individual ports capable of operating at 10 or 100 Mbps can bridge 10 Mbps and 100 Mbps segments. No configuration of your network operating system is needed.



Bridging with a server equipped with two 10/100 adapters (requires NOS that supports multi-protocol routing)

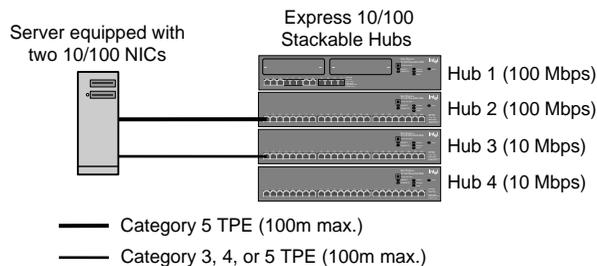
If you're using a NOS that supports multi-protocol routing, such as Novell NetWare* or Windows NT*, an inexpensive way to bridge the 10 Mbps and 100 Mbps segments is to install two 10/100 adapters (one running at 10 Mbps and the other at 100 Mbps) in your server and let the server bridge the segments.

Check with your NOS manufacturer to verify support for multi-protocol routing.

Hubs 1 and 2 are in one collision domain and share 100 Mbps of bandwidth.

Hubs 3 and 4 are in a separate collision domain from 1 and 2 and share 10 Mbps of bandwidth.

The server handles the bridging and allows hubs 1 and 2 to talk to hubs 3 and 4.

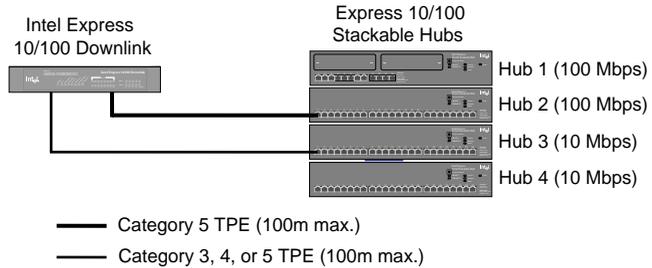


Here, the 2-port 10/100 Downlink bridges the two 100 Mbps hubs to the two 10 Mbps hubs.

The benefits of using the Downlink are its low cost and simplicity. Just plug the hubs into the Downlink; it takes care of the rest.

Bridging with the Express 10/100 Downlink

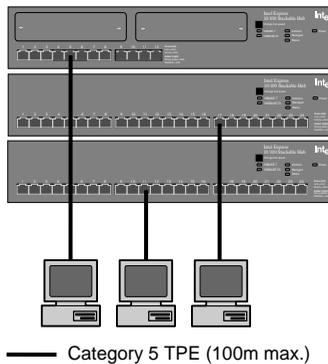
The Express 10/100 Downlink has two ports that operate at either 10 or 100 Mbps. Each port automatically senses the speed of the attached device. All you need to do is set the speed of the hubs. No configuration of your network operating system is needed.



100 Mbps-only environment

In the 100-Mbps only environment, you can only connect hubs using an Intel Cascade Cable. You must also use CAT 5 TPE cabling to connect devices (switches, workstations, servers, and so on). The distance between a port and an attached device can't exceed 100 meters.

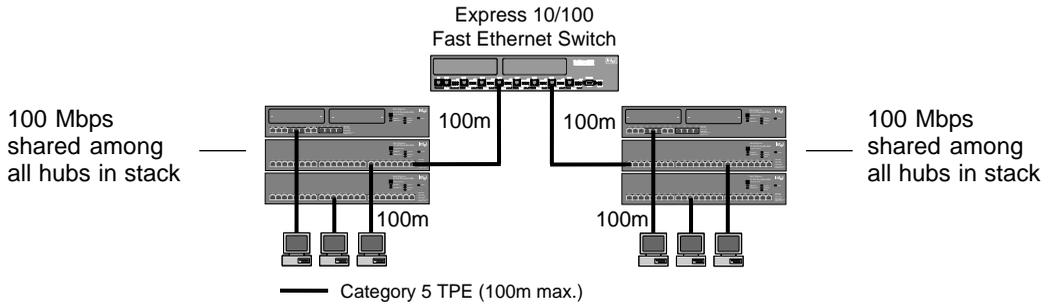
100 Mbps shared among all hubs in stack



— If you intend to install an optional Management Module in a 12-port hub, place the hub at eye level. This makes it easier to read the module's LCD panel.

Extending the 100 Mbps network topology

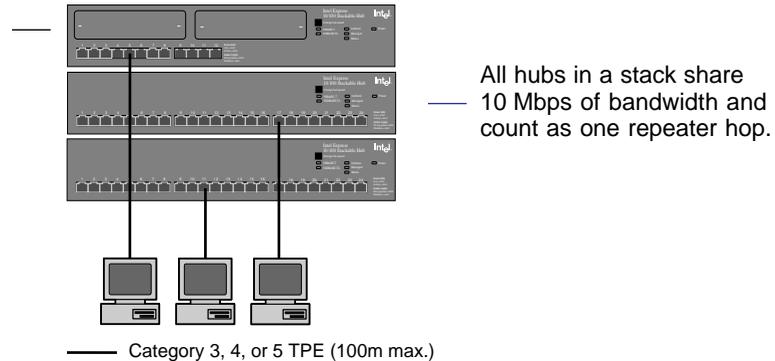
You can extend the network topology only by connecting hubs to a switch, bridge, or router. You can't extend the topology by daisy-chaining hubs together. In the example below, the network diameter is extended to 400 meters by connecting the two hub stacks to an Intel Express 10/100 Fast Ethernet Switch. Each stack is a separate collision domain.



10 Mbps-only environment

In a 10-Mbps only environment, you can connect hubs using an Intel Cascade Cable or CAT 3, 4, or 5 TPE cables. Connect to devices (switches, workstations, servers, and so on) with CAT 3, 4, or 5 TPE cables. The distance between hubs or between a port and an attached device can't exceed 100 meters when using TPE cabling.

If you intend to install an optional Management Module in a 12-port hub, place the hub at eye level. This makes it easier to read the module's LCD panel.



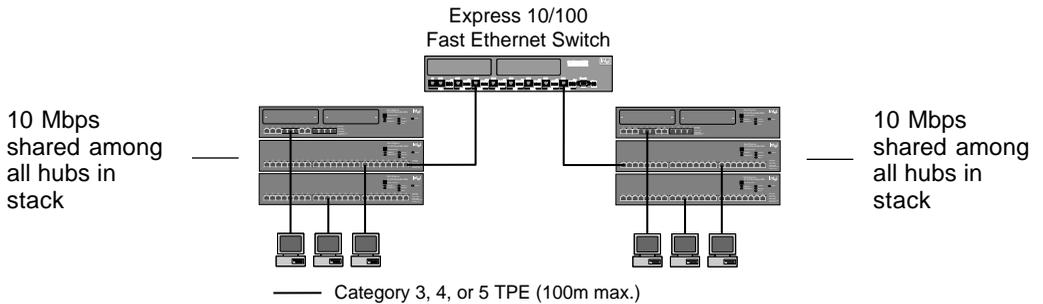
Extending the 10 Mbps network topology

To extend the 10BASE-T network topology, you can attach hubs to a switch or daisy-chain the hubs using TPE cabling.

If you attach a stack of hubs to a switch, each stack gets its own 10 Mbps of bandwidth.

Attaching hubs to a switch

The illustration below shows two stacks of Express 10/100 Stackable Hubs operating at 10 Mbps attached to Intel Express 10/100 Switch ports also operating at 10 Mbps. Each TPE cable is extended to 100 meters, from workstation to hub and hub to switch. The total network topology is extended to 400 meters.



Follow the 5-4-3-2-1 general rule when daisy-chaining 10 Mbps hubs

Five hubs (or hub stacks) are allowed.

Four segments.

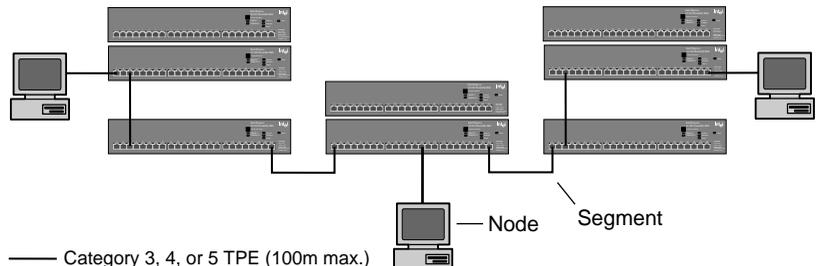
Three hub stacks can have nodes attached.

Two hub stacks can't be populated and are extensions only.

All of this makes *one* collision domain with a maximum of 576 stations (if you're using 24-port Express 10/100 Hubs).

Daisy-chaining hubs (10 Mbps only)

Hubs can be connected using an Intel Cascade Cable, or "daisy chained" together using TPE cabling when operating at 10 Mbps. Hub-to-hub TPE connections should not exceed 100 meters, and no more than five hubs can be connected (a stack of hubs counts as one hub). Of those five hubs or stacks of hubs, only three can have devices attached.



Understanding LEDs

NOTE

If you don't see the Green LED light immediately, wait. Establishing a link to a device can take up to six seconds.

Port LEDs

The LEDs above a port provide information about the port's configuration and status.



LED	Status	Meaning
Green	Solid	Port has a link.
	Blinking	Receive activity detected on port.
	Off	No link detected.
Amber	Solid	Port is disabled by management (not applicable without optional Management Module).
	Steady blink and Status LED on solid	Hub speed and device speed don't match.
	Steady blink and Status LED blinking	Out of specification cabling or a port hardware problem. Try a different cable.
	Erratic blink and Status LED on solid	Port was partitioned (auto-disabled). See below.
	Off	Normal. No link detected if Green LED is also off.

Partitioned ports

A port is automatically disabled by the hub when a serious error occurs, such as a series of more than 64 collisions on a single packet.

Once the hub sees a valid packet from the device or is able to transmit a packet from the port, the hub automatically unpartitions the port. Connected devices are usually not affected by a partitioned port because the port is unpartitioned so quickly.

Usually a partitioned port signals an overloaded network or a malfunctioning device on the network. Alleviate an overloaded network by segmenting the network so that fewer devices share a fixed amount of bandwidth. Do this by adding a switch.

NOTE

If you change the speed, the hub keeps the setting until you change it again, even if you turn off the hub's power.

Changes the hub speed. The default speed is 100 Mbps.

Unit LEDs

Unit LEDs indicate the status of a hub's power supply, hub speed, collision occurrences in a hub or stack of hubs, and whether a hub is managed.



Change hub speed



10BASE-T



Collision



Power



100BASE-TX



Managed



Status

LED	Status	Meaning
10BASE-T	On	Hub is operating at 10 Mbps.
100BASE-TX	On	Hub is operating at 100 Mbps.
Collision	Blinking	Collisions detected on hub (or stack). LED brightens as more collisions are detected. Collisions are normal in an Ethernet environment. Continuous blinking indicates an overloaded network.
	Off	No collisions detected.
Managed	On	Hub is managed by the optional Management Module.
	Off	Hub is not managed by the Management Module.
Status	On	Hub is operating normally.
	Blinking	Hub has an internal hardware or software problem. See the port Amber LED description on the previous page.
Managed and Status	Blinking	Hub failed to load its internal software properly. Try recycling the power.
Power	On	Hub is receiving power.
	Off	Hub is not receiving power.

Cabling Requirements

Incorrect cabling is often the cause of network problems. Read the next two pages if you're unsure of your requirements.

100BASE-TX requirements

The 100BASE-TX Fast Ethernet specification requires you use CAT 5 unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cabling to operate at 100 Mbps (UTP and STP are collectively referred to as TPE). If you use lower grade cabling (CAT 3 or CAT 4 TPE), you may get a connection, but will soon experience data loss or slow performance.

You're limited to 100 meters between any two devices (the IEEE specification requires this).

10BASE-T requirements

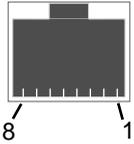
The 10BASE-T Ethernet specification allows you to use CAT 3, CAT 4, or CAT 5 unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cabling to operate at 10 Mbps (UTP and STP are collectively referred to as TPE).

You're limited to 100 meters between any two devices (the IEEE specification requires this).

100BASE-FX requirements

The optional Fiber Module (Intel product code EE110FX) lets you use multimode fiber optic cable to connect to a switch, bridge, or router up to 160 meters away at half-duplex. With a full-duplex connection, you can connect up to 2 km away. Using the Fiber Module or the Ethernet Module are the only cases in which you can establish a full-duplex link to the hub.

The module uses an SC fiber optic connector.



Straight-through vs. crossover cables

Ports on the hub are wired MDI-X (media dependent interface crossover) so you can use a straight-through cable when connecting to a workstation or server (network adapter cards are wired MDI). For direct connection to another MDI-X port (hub and switch ports), you must use a crossover cable.

Must be a twisted-pair <

Must be a twisted-pair <

SCHEMATICS FOR STRAIGHT & CROSSOVER TWISTED-PAIR CABLE					
Straight-Through			Crossover		
Hub		Adapter	Hub		Hub/Switch
1 RX +	————	1 TX +	1 RX +	↘	1 RX+
2 RX -	————	2 TX -	2 RX -	↗	2 RX -
3 TX +	————	3 RX +	3 TX +	↗	3 TX +
6 TX-	————	6 RX -	6 TX-	↘	6 TX -

NOTE

TPE crossover cables can be used only to daisy-chain hubs running at 10 Mbps.

You can't use TPE crossover cables to daisy-chain hubs running at 100 Mbps. You must use an Intel Cascade Cable.

Determining which cable to use

The following guidelines are based on the Express 10/100 Stackable Hub, the Intel 10/100 Fast Ethernet Switch, the Intel EtherExpress™ family of network adapters (server or workstation), and the NetportExpress™ family of print servers. These guidelines apply to the majority of hubs and switches and all servers, workstations, or print servers.

<u>For this connection</u>	<u>Use this cable</u>
Hub to switch	Crossover
Hub to hub (10 Mbps only)	Crossover
Hub to server or workstation	Straight-through
Hub to print server	Straight-through

Troubleshooting

No link (green LED is off).

- Remove the cable and plug it in again. Wait up to six seconds for a link.
- If you're using the wrong type of cable, either straight-through or crossover, the green LED above the port will not come on. Use the other type of cable.
- Make sure the device you've connected to a port is a 10BASE-T or 100BASE-TX device. The Express 10/100 Stackable Hub doesn't support 100BASE-T4 devices running at 100 Mbps. However, it does support T4 devices running at 10 Mbps.

No link, amber LED above port is blinking slowly.

The hub speed setting doesn't match the attached device's speed setting. To correct the problem, change either the hub or device speed setting so they match. Remember, all hub ports operate at the same speed. You can't connect both 10BASE-T and 100BASE-TX devices to the same hub.

Link, but amber LED above port is blinking erratically.

The port was partitioned (auto-disabled). This condition is usually caused by a malfunctioning network adapter, bad cable, or an overloaded network segment. See page 10 for more information.

Intermittent loss of link.

- If hubs are operating in a 100 Mbps environment, make sure you use an Intel Cascade Cable to connect the hubs. You can use TPE cabling only when connecting hubs running at 10 Mbps.
- Make sure the device connected to the hub port is configured for half duplex operation. Hubs operate at half duplex only.
- A cable segment somewhere in your collision domain is too long. Make sure none of your TPE cabling is longer than 100 meters.
- Make sure your stack of hubs contains no more than eight hubs.
- You may be using the wrong grade of cable. If you are, you will experience intermittent performance and you may eventually lose the connection between the port and the attached device. For more information, see page 12.

Frequently Asked Questions

I have 10 Mbps and 100 Mbps hubs connected with an Intel Cascade Cable. Can they talk to each other?

No. All hubs running at 100 Mbps are in one collision domain (or segment) and all hubs running at 10 Mbps are in a separate collision domain. See pages 5-7 for bridging options.

Then why would I connect hubs running at 10 Mbps to hubs running at 100 Mbps?

For management purposes. By connecting hubs running at 10 and 100 Mbps in the same stack, you need only one Management Module to manage the entire stack. This simplifies the network management configuration.

Remember to connect the hubs with an Intel Cascade Cable, not TPE cabling.

How do I get hubs running at 10 Mbps to talk to hubs running at 100 Mbps?

See pages 5-7 for bridging options.

Can I set the speed on individual ports?

No. All ports on a hub run either at 10 Mbps or 100 Mbps.

I need to connect the hub to a device that's farther than 100 meters away. What do I do?

100 Mbps devices: Purchase an optional Fiber Module (Intel product code EE110FX). This allows you to extend the distance between the hub and device to a maximum of 160 meters at half-duplex or 2 km at full-duplex. The module plugs into the 12-port hub running at either 10 or 100 Mbps. See page 12 for more information.

Also, you can purchase a switch or bridge. This allows you to extend the distance between any two devices to 200 meters (100 meters from the switch or bridge to the hub and another 100 meters from the hub to the device).

10 Mbps devices: See the above 100 Mbps device options. Additionally, you can daisy-chain hubs running at 10 Mbps with TPE cable. See page 9 for more information.

Can I configure a full-duplex link between the hub and another device?

Only to the optional Ethernet Module or Fiber Module. The external ports on the modules are switched ports and are capable of full duplex. The base ports of the hubs aren't capable of full-duplex operation.

Can I connect a 100BASE-T4 device to the hub?

If the device is capable of 10 or 100 Mbps operation, you can connect it at 10 Mbps. You need to purchase a 100BASE-T4 hub to connect a 100BASE-T4 device at 100 Mbps.

Can I daisy-chain hubs together with TPE cabling?

Only hubs running at 10 Mbps. You must use an Intel Cascade Cable to connect hubs running at 100 Mbps.

If I daisy-chain hubs running at 10 Mbps, can I use one network management module to manage all connected hubs?

No. You can manage only multiple hubs connected with an Intel Cascade Cable.

Can I stack Intel Express 10/100 Stackable Hubs with Intel Express 100BASE-TX Stackable Hubs?

No. The hubs use a different Cascade Cable and connectors. However, both are 100BASE-TX compliant and can easily exist in the same network. To connect the hubs, use an optional Ethernet Module, Intel Express 10/100 Fast Ethernet Switch, or Express 10/100 Downlink.

Limited Hardware Warranty

Intel warrants to the original owner that the hardware product delivered in this package will be free from defects in material and workmanship for three (3) years following the latter of: (i) the date of purchase only if you register by returning the registration card as indicated thereon with proof of purchase; or (ii) the date of manufacture; or (iii) the registration date if by electronic means provided such registration occurs within 30 days from purchase. This warranty does not cover the product if it is damaged in the process of being installed. Intel recommends that you have the company from whom you purchased this product install the product.

INTEL RESERVES THE RIGHT TO FILL YOUR ORDER WITH A PRODUCT CONTAINING NEW OR REMANUFACTURED COMPONENTS. THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF INFRINGEMENT OF INTELLECTUAL PROPERTY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE.

This warranty does not cover replacement of products damaged by abuse, accident, misuse, neglect, alteration, repair, disaster, improper installation or improper testing. If the product is found to be otherwise defective, Intel, at its option, will replace or repair the product at no charge except as set forth below, provided that you deliver the product along with a return material authorization (RMA) number either to the company from whom you purchased it or to Intel (North America only). If you ship the product, you must assume the risk of damage or loss in transit. You must use the original container (or the equivalent) and pay the shipping charge. Intel may replace or repair the product with either new or remanufactured product or parts, and the returned product becomes Intel's property. Intel warrants the repaired or replaced product to be free from defects in material and workmanship for a period of the greater of: (i) ninety (90) days from the return shipping date; or (ii) the period of time remaining on the original three (3) year warranty.

This warranty gives you specific legal rights and you may have other rights which vary from state to state. All parts or components contained in this product are covered by Intel's limited warranty for this product; the product may contain fully tested, recycled parts, warranted as if new. For warranty information call one of the numbers below.

Returning a Defective Product (RMA)

Before returning any product, contact an Intel Customer Support Group and obtain an RMA number by calling:

North America only: (916) 377-7000

Other locations: Return the product to the place of purchase.

If the Customer Support Group verifies that the product is defective, they will have the Return Material Authorization Department issue you an RMA number to place on the outer package of the product. Intel cannot accept any product without an RMA number on the package.

LIMITATION OF LIABILITY AND REMEDIES

INTEL SHALL HAVE NO LIABILITY FOR ANY INDIRECT OR SPECULATIVE DAMAGES (INCLUDING, WITHOUT LIMITING THE FOREGOING, CONSEQUENTIAL, INCIDENTAL AND SPECIAL DAMAGES) ARISING FROM THE USE OF OR INABILITY TO USE THIS PRODUCT, WHETHER ARISING OUT OF CONTRACT, NEGLIGENCE, TORT, OR UNDER ANY WARRANTY, IRRESPECTIVE OF WHETHER INTEL HAS ADVANCE NOTICE OF THE POSSIBILITY OF ANY SUCH DAMAGES, INCLUDING, BUT NOT LIMITED TO LOSS OF USE, INFRINGEMENT OF INTELLECTUAL PROPERTY, BUSINESS INTERRUPTIONS, AND LOSS OF PROFITS, NOTWITHSTANDING THE FOREGOING, INTEL'S TOTAL LIABILITY FOR ALL CLAIMS UNDER THIS AGREEMENT SHALL NOT EXCEED THE PRICE PAID FOR THE PRODUCT. THESE LIMITATIONS ON POTENTIAL LIABILITIES WERE AN ESSENTIAL ELEMENT IN SETTING THE PRODUCT PRICE. INTEL NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME FOR IT ANY OTHER LIABILITIES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

Software provided with the hardware product is not covered under the hardware warranty described above. See the applicable software license agreement which shipped with the hardware product for details on any software warranty.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

Manufacturer Declaration

This certifies that the Intel Express 10/100 Stackable Hub complies with the EU Directive 89/33/EEC, using the EMC standards EN55022 (Class A) and EN50082-1. This product also meets or exceeds EN 60950 (TUV) requirements. This product has been tested and verified to meet CISPR 22 Class A requirements.

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

WARNING

The system is designed to operate in a typical office environment. Choose a site that is:

- Clean and free of airborne particles (other than normal room dust).
- Well ventilated and away from sources of heat including direct sunlight.
- Away from sources of vibration or physical shock.
- Isolated from strong electromagnetic fields produced by electrical devices.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.

Do not attempt to modify or use the supplied AC power cord if it is not the exact type required.

Ensure that the system is disconnected from its power source and from all telecommunications links, networks, or modems lines whenever the chassis cover is to be removed. Do not operate the system with the cover removed.

AVERTISSEMENT

Le système a été conçu pour fonctionner dans un cadre de travail normal. L'emplacement choisi doit être:

- Propre et dépourvu de poussière en suspension (sauf la poussière normale).
- Bien aéré et loin des sources de chaleur, y compris du soleil direct.
- A l'abri des chocs et des sources de vibrations.
- Isolé de forts champs magnétiques générés par des appareils électriques.
- Dans les régions sujettes aux orages magnétiques il est recommandé de brancher votre système à un supresseur de surtension, et de débrancher toutes les lignes de télécommunications de votre modem durant un orage.
- Muni d'une prise murale correctement mise à la terre.

Ne pas utiliser ni modifier le câble d'alimentation C. A. fourni, s'il ne correspond pas exactement au type requis.

Assurez vous que le système soit débranché de son alimentation ainsi que de toutes les liaisons de télécommunication, des réseaux, et des lignes de modem avant d'enlever le capot. Ne pas utiliser le système quand le capot est enlevé.

WARNUNG

Das System wurde für den Betrieb in einer normalen Büroumgebung entwickelt. Der Standort sollte:

- sauber und staubfrei sein (Hausstaub ausgenommen);
- gut gelüftet und keinen Heizquellen ausgesetzt sein (einschließlich direkter Sonneneinstrahlung);
- keinen Erschütterungen ausgesetzt sein;
- keine starken, von elektrischen Geräten erzeugten elektromagnetischen Felder aufweisen;
- in Regionen, in denen elektrische Stürme auftreten, mit einem Überspannungsschutzgerät verbunden sein; während eines elektrischen Sturms sollte keine Verbindung der Telekommunikationsleitungen mit dem Modem bestehen;
- mit einer geerdeten Wechselstromsteckdose ausgerüstet sein.

Versuchen Sie nicht, das mitgelieferte Netzkabel zu ändern oder zu verwenden, wenn es sich nicht um genau den erforderlichen Typ handelt.

Das System darf weder an eine Stromquelle angeschlossen sein noch eine Verbindung mit einer Telekommunikationseinrichtung, einem Netzwerk oder einer Modem-Leitung haben, wenn die Gehäuseabdeckung entfernt wird. Nehmen Sie das System nicht ohne die Abdeckung in Betrieb.

AVVERTENZA

Il sistema è progettato per funzionare in un ambiente di lavoro tipico. Scegliere una postazione che sia:

- Pulita e libera da particelle in sospensione (a parte la normale polvere presente nell'ambiente).
- Ben ventilata e lontana da fonti di calore, compresa la luce solare diretta.
- Al riparo da urti e lontana da fonti di vibrazione.
- Isolata dai forti campi magnetici prodotti da dispositivi elettrici.
- In aree soggette a temporali, è consigliabile collegare il sistema ad un limitatore di corrente. In caso di temporali, scollegare le linee di comunicazione dal modem.
- Dotata di una presa a muro correttamente installata.

Non modificare o utilizzare il cavo di alimentazione in c. a. fornito dal produttore, se non corrisponde esattamente al tipo richiesto.

Prima di rimuovere il coperchio del telaio, assicurarsi che il sistema sia scollegato dall'alimentazione, da tutti i collegamenti di comunicazione, reti o linee di modem. Non avviare il sistema senza aver prima messo a posto il coperchio.

ADVERTENCIAS

El sistema está diseñado para funcionar en un entorno de trabajo normal. Escoja un lugar:

- Limpio y libre de partículas en suspensión (salvo el polvo normal)
- Bien ventilado y alejado de fuentes de calor, incluida la luz solar directa.
- Alejado de fuentes de vibración.
- Aislado de campos electromagnéticos fuertes producidos por dispositivos eléctricos.
- En regiones con frecuentes tormentas eléctricas, se recomienda conectar su sistema a un eliminador de sobrevoltage y desconectar el módem de las líneas de telecomunicación durante las tormentas.
- Previsto de una toma de tierra correctamente instalada.

No intente modificar ni usar el cable de alimentación de corriente alterna, si no se corresponde exactamente con el tipo requerido.

Asegúrese de que cada vez que se quite la cubierta del chasis, el sistema haya sido desconectado de la red de alimentación y de todos los enlaces de telecomunicaciones, de red y de líneas de módem. No ponga en funcionamiento el sistema mientras la cubierta esté quitada.

Intel Automated Customer Support

You can reach Intel's automated support services 24 hours a day, every day at no charge. The services contain the most up-to-date information about Intel products. You can access installation instructions, troubleshooting information, and general product information.

	World Wide Web & Internet FTP Access Intel's World Wide Web home page or download information using anonymous FTP.	Intel BBS Use Intel's Bulletin Board. Dial in by modem at 8-N-1, and up to 14.4 Kbps.
Troubleshooting	✓	
Software updates	✓	✓
Installation notes	✓	
Product information	✓	
How to access:	WWW <i>News:</i> news://cs.intel.com <i>Customer Support:</i> http://support.intel.com FTP <i>Host:</i> ftp.intel.com <i>Directory:</i> pub/support/enduser_reseller	US and Canada 1-503-264-7999 Europe +44-1793-432955 Worldwide +1-503-264-7999

Intel Customer Support Technicians

Free support for 90 days: You can speak with our technical support professionals free of charge for 90 days after your initial call.

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Worldwide access: Intel has technical support centers worldwide. Many of the centers are staffed by technicians who speak the local languages. For a list of all Intel support centers, the telephone numbers, and the times they are open, download document 9089 from one of the automated services.

If you don't have access to automated services, contact your local dealer or distributor. Or call +1-916-377-7000 from 07:00 to 17:00 Monday through Friday, U.S. Pacific Time.