

Intel Express 10/100 Stackable Hub Fiber and Ethernet Modules

User Guide



intel®

This guide covers the following products:

Intel Express 10/100 Stackable Hub – Ethernet Module. Product code EE110EM.

Intel Express 10/100 Stackable Hub – Fiber Module. Product code EE110FX.

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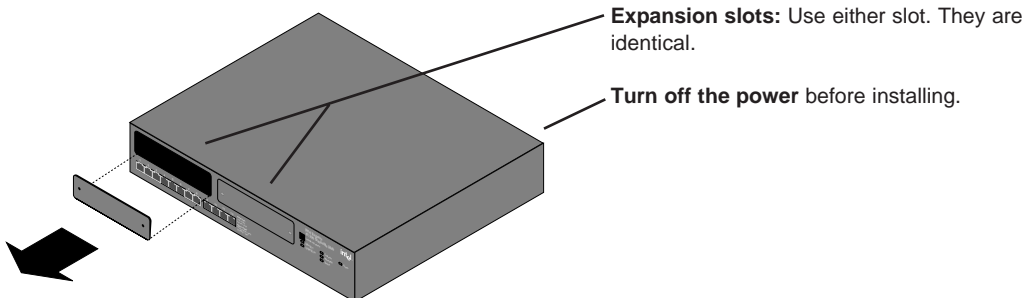
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First edition June 1997

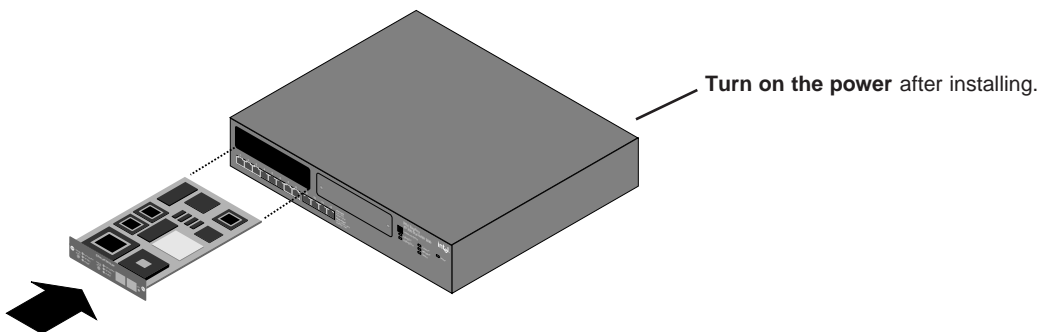
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Quick Start

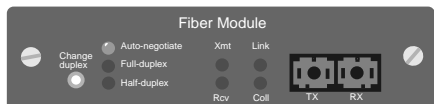
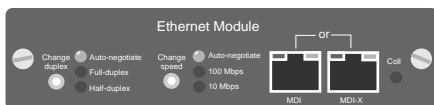
1. Turn off the power, then unscrew and remove the panel from an expansion slot on the Express 10/100 Stackable Hub.



2. Plug either the Ethernet Module or the Fiber Module into a slot, using the retaining screws to secure the module to the hub.



3. Plug a device in and check the LEDs for a link. You're done.



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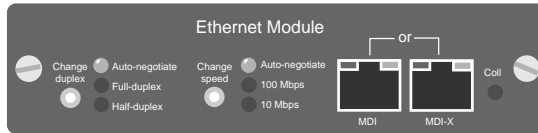
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Overview

This guide covers the Intel Express Stackable Hub Ethernet Module (product code EE110EM) and the Intel Express Stackable Hub Fiber Module (product code EE110FX). The Ethernet Module supports both the 10BASE-T Ethernet and 100BASE-TX Fast Ethernet standards. The Fiber Module supports the 100BASE-FX Fast Ethernet standard.

The modules can be used only with the 12-port version of the 10/100 Stackable Hub (product code EE110TX12). You can install either module in a hub running at 10 or 100 Mbps.

Ethernet Module

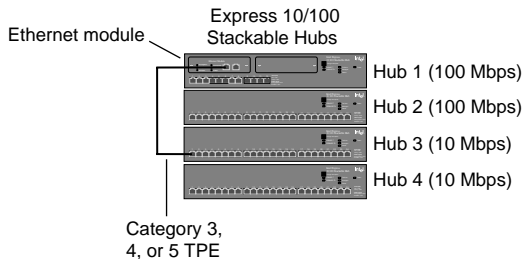


The Ethernet Module acts as a switch port plugged into an Express 10/100 Stackable Hub. The Ethernet Module

- bridges Express 10/100 Stackable Hubs running at 10 Mbps to hubs running at 100 Mbps.
- connects Express10/100 Stackable Hubs running at 100 Mbps to each other with TPE cable (creating separate collisions domains).
- connects an Express10/100 Stackable Hub to another device at full-duplex, such as a server or switch.

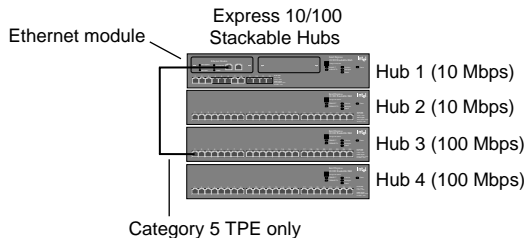
Bridging 10 and 100 Mbps hubs

To bridge hubs of different speeds, simply plug an Ethernet Module into an expansion slot on a 12-port hub (see “Quick Start” on page 1), then connect to a hub running at the other speed. The Ethernet Module bridges the two collision domains.



100 Mbps hubs connected to 10 Mbps hubs

Plug the Ethernet Module into a 100 Mbps hub—connect it to a 10 Mbps hub with CAT 3, 4, or 5 TPE.



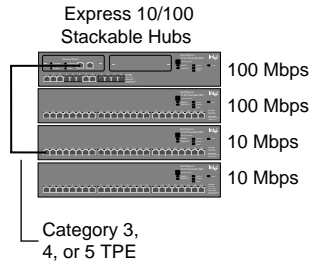
10 Mbps hubs connected to 100 Mbps hubs

Plug the Ethernet Module into a 10 Mbps hub—connect it to a 100 Mbps hub with CAT 5 TPE.

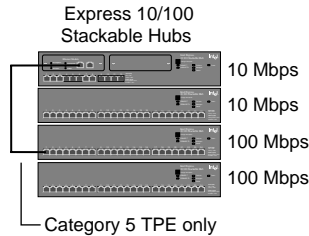
Example configurations

These two example configurations show the combinations of duplex and speed LEDs.

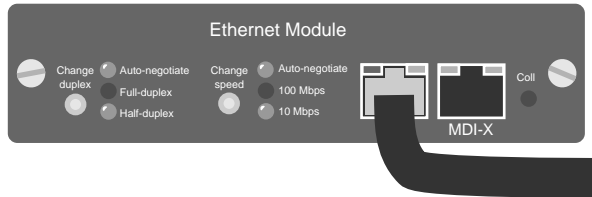
100 Mbps hub connected to 10 Mbps hub



10 Mbps hub connected to 100 Mbps hub

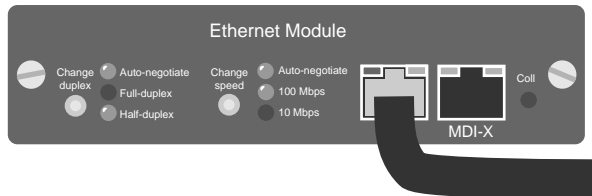


Bridging hubs running at 100 Mbps to hubs at 10 Mbps



This Ethernet Module is plugged into a hub running at 100 Mbps. The module is then connected to a 10 Mbps hub by CAT 3, 4, or 5 TPE cable.

Bridging hubs running at 10 Mbps to hubs at 100 Mbps



This Ethernet Module is plugged into a hub running at 10 Mbps. The module is then connected to a 100 Mbps hub using CAT 5 TPE cable only.

Notes on bridging

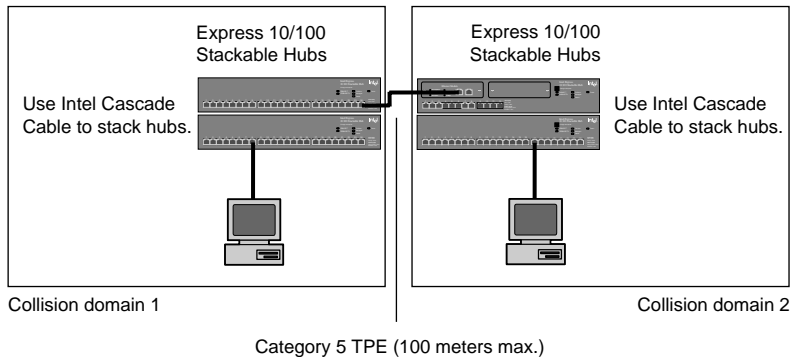
- 1 You can insert the Ethernet Module into a hub running at 10 or 100 Mbps.
- 2 You don't need to configure the speed or duplex mode.
- 3 Do not change the duplex mode to full-duplex.
- 4 If you're using a straight-through TPE cable (standard cable), use the MDI port on the Ethernet Module.

Connecting 100 Mbps hubs with TPE cable

Class I hubs, such as the Intel Express 10/100 Stackable Hub, cannot be directly connected with TPE cable when running at 100 Mbps. However, since the Ethernet Module acts as a switched port on a hub, you can use it to connect to another 100 Mbps hub with TPE cable. Each hub or hub stack is a separate collision domain.

NOTE

Using an Ethernet Module is the only way you can connect Express 10/100 Stackable Hubs to each other with TPE cable while operating at 100 Mbps.



Because you're connecting to a hub port, you cannot establish a full-duplex connection between the hubs.

You don't need to configure the speed or duplex mode of the Ethernet Module. Auto-negotiation will work for both settings.

Notes on connecting hubs running at 100 Mbps

- 1 Use only Intel Cascade Cable (product code EE110CC) to stack hubs.
- 2 Never connect hubs operating at 100 Mbps with TPE cable unless you use an Ethernet Module.
- 3 No configuration of the speed or duplex mode is needed.
- 4 Do not change the duplex mode to full-duplex.

Connecting to a device at full-duplex

Express 10/100 Stackable Hubs operate at half-duplex. The only way to connect to a device at full-duplex is with an Ethernet Module.

Connecting to a switch at full-duplex

Not all device manufacturers implement auto-negotiation of duplex mode. To ensure the Ethernet Module connects to the device at full-duplex, force the duplex mode to full-duplex.

To force the duplex mode, use the Change duplex button:

- 1 Long press the Change duplex button. The Auto-negotiate LED blinks.
- 2 Short press the Change duplex button. The Full-duplex LED blinks.
- 3 Long press the Change duplex button. The Full-duplex LED stays on solid.
- 4 Configure the device on the other end for full duplex. (See the device's documentation for specific instructions.)

To force the speed, follow the steps above using the Change speed button.

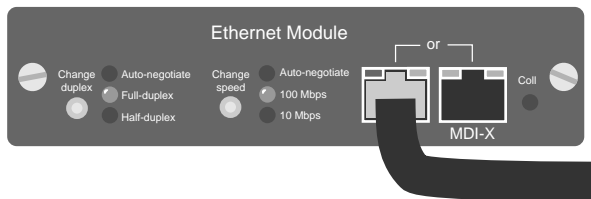
NOTE

A **long press** is held for 2 seconds or more.

A **short press** is held for less than 2 seconds.

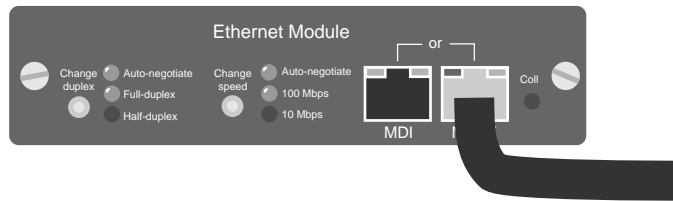
Example configurations

Connecting to a switch at full-duplex



This is an Ethernet Module plugged into a hub running at 100 Mbps. The module is then connected to a 100 Mbps switch using CAT 5 TPE cable. The module was forced to run in full-duplex mode.

Connecting to a server at full-duplex

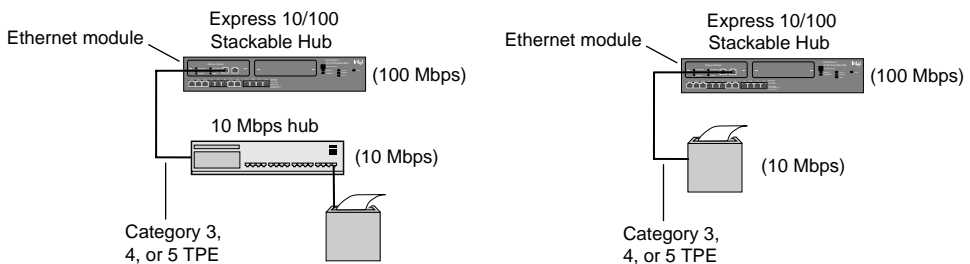


This is an Ethernet Module plugged into a hub running at 10 or 100 Mbps. The module is then connected to a server with an Intel EtherExpress™ PRO/100 LAN Adapter using CAT 5 TPE cable. Use the MDI-X connector on the Ethernet Module.

You don't need to configure the Ethernet Module or the LAN adapter to establish a full-duplex connection at 100 Mbps. However, if you don't get a full-duplex connection at 100 Mbps, force the speed and duplex on both the module and the adapter (see steps 1-4 on page 7).

Connecting to a 10 Mbps printer from a hub that is operating at 100 Mbps

To connect to a 10 Mbps-only printer through a 10 Mbps hub, use the MDI connector on the Ethernet Module. To connect directly to a 10 Mbps print server, use the MDI-X connector.

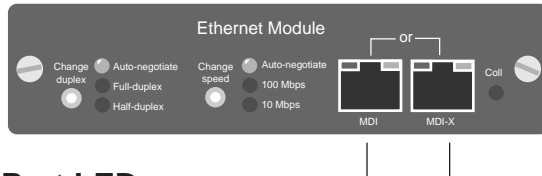


Notes on connecting to a device at full-duplex

- 1 If you're unsure of a device's auto-negotiation capabilities, force the duplex mode of the Ethernet Module to ensure you'll get a full-duplex connection.
- 2 Your performance with a full-duplex connection will vary depending on your network. If you have problems, it's safest to establish a half-duplex connection.

Understanding Ethernet Module LEDs

The LEDs on the Ethernet Module provide information about the module's configuration and status.



The LEDs on both ports light when a cable is attached to either port.

Port LEDs

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

Green LED
(left side)



Amber LED
(right side)

LED	Status	Meaning
Green	Solid	Port has a link.
	Blinking	Receive or transmit activity detected on port.
	Off	No link detected.
Amber	Steady blink and green LED on solid	Ethernet Module speed and device speed don't match. This occurs only if the speed of the Ethernet Module has been forced to either 10 Mbps or 100 Mbps and the device on the other end doesn't match.
	Blinking and green LED off	The module has auto-partitioned the port due to a temporary error condition on the network. Make sure the duplex setting on the module matches the attached device.
	Off	Normal. No link detected if green LED is unlit.

Change duplex button and LEDs

You can determine the Ethernet Module's duplex configuration and status from the duplex LEDs. Use the Change duplex button to cycle among duplex modes.

Attach any Express 10/100 Stackable Hub to the Ethernet Module and the module will automatically negotiate the correct duplex setting (always half-duplex). The default duplex mode setting is auto-negotiate.

LED	Status	Meaning
Auto-negotiate	Solid	Module is set to auto-negotiate the duplex mode.
	Blinking	Module is being forced to cycle among auto-negotiate, half-duplex, and full-duplex.
	Off	Duplex mode has been forced to half or full-duplex.
Full-duplex	Solid	Module is in full-duplex mode.
	Blinking	Module is being forced to cycle among auto-negotiate, half-duplex, and full-duplex.
	Off	Module is not in full-duplex mode.
Half-duplex	Solid	Module is in half-duplex mode.
	Blinking	Module is being forced to cycle among auto-negotiate, half-duplex, and full-duplex.
	Off	Module is not in half-duplex mode.

To change the duplex mode

This example forces the duplex mode to full-duplex:

- 1 Long press the Change duplex button. The Auto-negotiate LED will blink.
- 2 Short press the Change duplex button. The Full-duplex LED will blink.
- 3 Long press the Change duplex button. The Full-duplex LED will stay on solid.

NOTE

A **long press** is held for 2 seconds or more.

A **short press** is held for less than 2 seconds.

NOTE

See the 10BASE-T and 100BASE-TX LEDs on the hub to determine the hub speed.

Change speed button and LEDs

You can determine the speed of the connection between the Ethernet Module and device from the speed LEDs. Use the Change speed button to cycle among speed settings.

Attach any Express 10/100 Stackable Hub to the Ethernet Module and the module will automatically negotiate the correct speed. The default speed setting is auto-negotiate.

LED	Status	Meaning
Auto-negotiate	Solid	Module is set to auto-negotiate the speed.
	Blinking	Module is being forced to cycle among auto-negotiate, 10 Mbps, and 100 Mbps.
	Off	Speed has been forced to 100 Mbps or 10 Mbps.
100 Mbps	Solid	Module is running at 100 Mbps.
	Blinking	Module is being forced to cycle among auto-negotiate, 100 Mbps, and 10 Mbps.
	Off	Module is not running at 100 Mbps.
10 Mbps	Solid	Module is running at 10 Mbps.
	Blinking	Module is being forced to cycle among auto-negotiate, 100 Mbps, and 10 Mbps.
	Off	Module is not running at 10 Mbps.

To change the speed

This example forces the speed to 100 Mbps:

NOTE

A **long press** is held for 2 seconds or more.

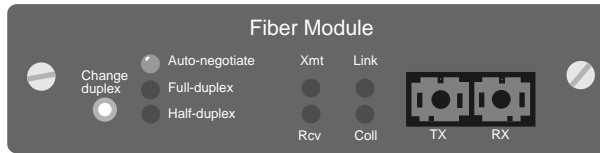
A **short press** is held for less than 2 seconds.

- 1 Long press the Change speed button. The Auto-negotiate LED blinks.
- 2 Short press the Change speed button. The 100 Mbps LED blinks.
- 3 Long press the Change speed button. The 100 Mbps LED stays on solid.

Coll (collision) LED

The Coll (collision) LED blinks amber when collisions are detected and is unlit when no collisions are occurring.

Fiber Module



The Fiber Module acts as a switched port plugged into an Express 10/100 Stackable Hub. The Fiber Module

- connects an Express 10/100 Stackable Hub running at 100 Mbps to another hub or other device beyond the 100 meter limitation (up to 160 meters at half-duplex or 2 km at full-duplex).
- allows an Express 10/100 Stackable Hub to be connected at full-duplex to another device, such as another hub with a Fiber Module installed or a switch.

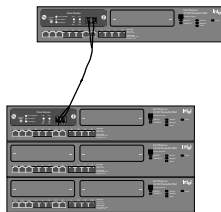
Connecting hubs beyond 100 meters

The only way you can connect Express 10/100 Stackable hubs beyond the 100 meter limit is with fiber optic cable and a Fiber Module plugged into each of the hubs. You can plug the module into a hub running at 10 Mbps or 100 Mbps. However, the fiber optic connection will always be at 100 Mbps.

NOTE

At half-duplex, you can connect hubs up to 160 meters apart.

At full-duplex, you can connect hubs up to 2 km apart.



You don't need to configure the duplex mode if you connect two Fiber Modules.

Both will auto-negotiate to full-duplex mode.

Use 62.5/125-micron multimode fiber optic cable with an SC-type connector.

Connecting to a device at full-duplex

Not all device manufacturers implement auto-negotiation of duplex mode. To ensure the Fiber Module connects to the device at full-duplex, force the duplex mode to full-duplex.

To force the duplex mode, use the Change duplex button:

NOTE

A **long press** is held for 2 seconds or more.

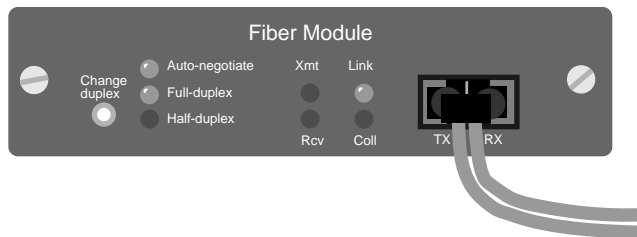
A **short press** is held for less than 2 seconds.

- 1 Long press the Change duplex button. The Auto-negotiate LED will blink.
- 2 Short press the Change duplex button. The Full-duplex LED will blink.
- 3 Long press the Change duplex button. The Full-duplex LED will stay on solid.
- 4 Configure the device on the other end for full-duplex. (See the device's documentation for specific instructions.)

Example configurations

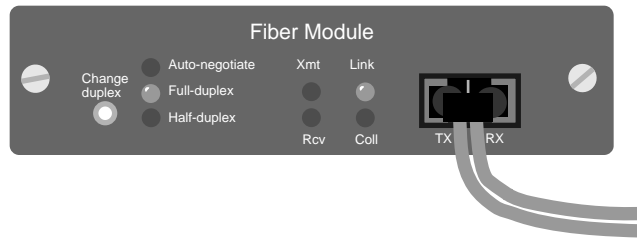
The first example configuration shows the Fiber Module connecting to another Express 10/100 Stackable Hub with a Fiber Module installed. The second shows the Fiber Module connecting to an Intel Express 10/100 Fast Ethernet Switch.

Connecting to another Fiber Module at full-duplex

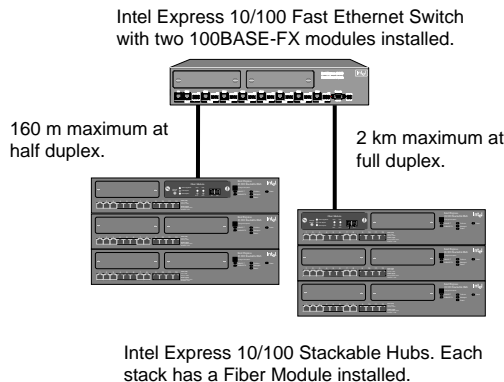


This is a Fiber Module plugged into a hub running at either 10 or 100 Mbps. The module is then connected to another Fiber Module using 62.5/125-micron fiber optic cable. Both modules auto-negotiated to full-duplex by default.

Connecting to a switch at full-duplex



This is a Fiber Module plugged into a hub running at either 10 or 100 Mbps. The module is then connected to an Intel Express 10/100 Fast Ethernet Switch at full-duplex using 62.5/125-micron fiber optic cable. The module was forced to full-duplex to ensure a connection to the switch. The maximum cable distances are shown below.

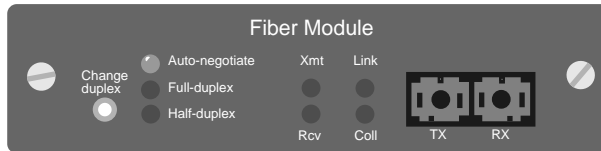


Notes on connecting with fiber optic cable

- 1 Connect devices up to 160 m apart at half-duplex. Connect up to 2 km at full-duplex.
- 2 Insert the Fiber Module into a hub running at 10 or 100 Mbps. However, the connection between the Fiber Module and the connected device can only be 100 Mbps.
- 3 If you're unsure of a device's auto-negotiation capabilities, force the duplex mode of the Fiber Module to ensure you'll get a full-duplex connection.
- 4 Performance with a full-duplex connection varies depending on your network. If you have problems, connect at half-duplex.

Understanding Fiber Module LEDs

The LEDs on the Fiber Module provide information about the module's configuration and status.



Duplex LEDs

You can determine the Fiber Module's duplex configuration and status from the duplex LEDs. Use the Change duplex button to cycle among duplex modes.

LED	Status	Meaning
Auto-negotiate	Solid	Module is set to auto-negotiate the duplex mode.
	Blinking	Module is being forced to cycle among auto-negotiate, half-duplex, and full-duplex.
	Off	Duplex mode has been forced to half or full-duplex.
Full-duplex	Solid	Module is in full-duplex mode.
	Blinking	Module is being forced to cycle among auto-negotiate, half-duplex, and full-duplex.
	Off	Module is not in full-duplex mode.
Half-duplex	Solid	Module is in half-duplex mode.
	Blinking	Module is being forced to cycle among auto-negotiate, half-duplex, and full-duplex.
	Off	Module is not in half-duplex mode.

NOTE

A **long press** is held for 2 seconds or more.

A **short press** is held for less than 2 seconds.

To change the duplex mode

This example forces the duplex mode to full-duplex:

- 1 Long press the Change duplex button. The Auto-negotiate LED blinks.
- 2 Short press the Change duplex button. The Full-duplex LED blinks.
- 3 Long press the Change duplex button. The Full-duplex LED stays on solid.

Transmit/Receive/Link/Collision LEDs

LED	Status	Meaning
Xmt (transmit)	Blinking green	Port is transmitting data.
	Off	Port is not transmitting data.
Rcv (receive)	Blinking green	Port is receiving data.
	Off	Port is not receiving data.
Link	Solid green	Port has a link.
	Off	No link detected.
Coll (collision)	Blinking amber	Collisions are detected.
	Off	No collisions are occurring.

Technical Specifications

Ethernet Module

Connector: UTP/STP RJ-45 (MDI and MDI-X pin configurations)

Cable: Category 5 unshielded or shielded twisted-pair Ethernet (CAT 5 UTP or CAT 5 STP) at 100 Mbps. CAT 3, 4, or 5 UTP or STP at 10 Mbps. This guide abbreviates UTP and STP as TPE (twisted-pair Ethernet).

Distance: 100 m (328 feet) between devices regardless of speed or duplex mode

Standards: 10BASE-T Ethernet
100BASE-TX Fast Ethernet

Spanning tree: Not supported

Fiber Module

Connector: SC fiber optic

Cable: 62.5/125 μ multimode fiber optic

Distance: 2 km (1.2 miles) at full-duplex
160 m (525 feet) at half-duplex

Standards: 100BASE-FX Fast Ethernet

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 NONINFRINGEMENT 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 Ethernet Module or the Intel Fiber Module 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.

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