

AD337A, AD338A, and AD339A PCIe Gigabit Ethernet Card Overview

HP-UX Networking

HP Integrity Systems



**Manufacturing Part Number:
E0308**

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Product Overview: AD337A and AD338A

The AD337A (copper) and AD338A (fiber) PCIe 2-port Gigabit Ethernet LAN cards have the following features and requirements:

- **Complies with PCIe** Base Specification Rev. 1.0a or later.
- For HP-UX 11i v2, the software driver required for this card begins shipping with the HP-UX 11i v2 OE of June 2007.

For HP-UX 11i v3, the software driver required for this card begins shipping with the HP-UX 11i v3 OE of September 2007.

Once the driver has been released on the OE, it will also be available on the twice yearly application software media.

For systems that are already running the HP-UX 11i v2 or 11i v3 OE, you can either just load the required software driver bundle (**IEther-00**), or you can load the entire OE and /or application software and you will automatically get the driver you need for this card.

- Supports **Jumbo Frames**. Because Jumbo frames reduce a server's CPU processing of network packets, efficiency increases especially for heavy traffic. The same amount of data can be transferred in less frames. The Jumbo Frame maximum transmission unit (MTU) size is from 1501 to 9000 bytes.
- Supports HP **Serviceguard** for high availability and Auto-Port Aggregation (**APA**) for load balancing and single-system failover.
- Supports virtual LANs (**VLANs**) for increased flexibility. A Virtual LAN (VLAN) is a logical or *virtual* network segment that can span multiple physical network segments. VLANs also more efficiently use switches and end-stations by sending broadcasts and multicasts only to the intended nodes. For more information on this feature, please see *Using HP-UX VLANs* on <http://docs.hp.com>.
- Supports PCIe online addition/replacement (**OLA/R**) on specified systems. For instructions on performing OL* for Itanium-based systems running HP-UX 11i v 2.0 of September 2004 or later, refer to the *Interface Card OL* Support Guide*. Also supports online deletion on HP-UX 11i v3.
- Supports configuration through:
 - System Management Homepage (SMH) or command line `nwmgr` (for HP-UX 11i v3).
 - GUI-based system administration manager (**SAM**) (for HP-UX 11i v2).
- Online/Offline Diagnostics.
- Ignite-UX support.
- Supports vPars on HP-UX 11i v2 and 11i v3. Enables creation of additional partitions per server.
- Card resident EFI driver version 3.0.40 or later.
- On board Checksum Offload (CKO) to enhance server efficiency and performance over TCP, UDP, and IPv4.
- IPv4 TCP Segmentation Offload (TSO). TSO, also known as "large send" enables a system's protocol stack to offload portions of outbound TCP processing to a network interface card thereby reducing system CPU utilization and enhancing performance.
- LAN boot support on HP Integrity systems.
- Supports updating (writing) asset tag in Vital Product Data (VPD).

Product Overview: AD339A

The AD339A (copper) PCIe 4-port Gigabit Ethernet LAN cards have the following features and requirements:

- **Complies with PCIe** Base Specification Rev. 1.0a or later.
- For HP-UX 11i v2, the software driver required for this card begins shipping with the HP-UX 11i v2 OE of December 2007.

For HP-UX 11i v3, the software driver required for this card begins shipping with the HP-UX 11i v3 OE of March 2008.

Once the driver has been released on the OE, it will also be available on the twice yearly application software media.

For systems that are already running the HP-UX 11i v2 or 11i v3 OE, you can either just load the required software driver bundle (**IEther-00**), or you can load the entire OE and /or application software and you will automatically get the driver you need for this card.

- Supports **Jumbo Frames**. Because Jumbo frames reduce a server's CPU processing of network packets, efficiency increases especially for heavy traffic. The same amount of data can be transferred in less frames. The Jumbo Frame maximum transmission unit (MTU) size is from 1501 to 9000 bytes.
- Supports HP **Serviceguard** for high availability and Auto-Port Aggregation (**APA**) for load balancing and single-system failover.
- Supports virtual LANs (**VLANs**) for increased flexibility. A Virtual LAN (VLAN) is a logical or *virtual* network segment that can span multiple physical network segments. VLANs also more efficiently use switches and end-stations by sending broadcasts and multicasts only to the intended nodes. For more information on this feature, please see *Using HP-UX VLANs* on <http://docs.hp.com>.
- Supports PCIe online addition/replacement (**OLA/R**) on specified systems. For instructions on performing OL* for Itanium-based systems running HP-UX 11i v 2.0 of September 2004 or later, refer to the *Interface Card OL* Support Guide*. Also supports online deletion on HP-UX 11i v3. The AD339A does not support online addition, replacement, and deletion (OL*) when the card is in the shared slots (slots 3, 4) of rx3600 and rx6600 servers. The card can still be placed in those shared slots as long as no OL* is performed.
- Supports configuration through:
 - System Management Homepage (SMH) or command line `nwmgr` (for HP-UX 11i v3).
 - GUI-based system administration manager (**SAM**) (for HP-UX 11i v2).
- Online/Offline Diagnostics.
- Ignite-UX support.
- Supports vPars on HP-UX 11i v2 and 11i v3. Enables creation of additional partitions per server.
- Card resident EFI driver version 3.2.06 or later. Please see the "Known Issues on AD339A" for details on known problems with the EFI driver of AD339A.
- On board Checksum Offload (CKO) to enhance server efficiency and performance over TCP, UDP, and IPv4.
- IPv4 TCP Segmentation Offload (TSO). TSO, also known as "large send" enables a system's protocol stack to offload portions of outbound TCP processing to a network interface card thereby reducing system CPU utilization and enhancing performance.
- LAN boot support on HP Integrity systems. Please see the "Known Issues on AD339A" for details on a known problem with the LAN boot of AD339A.

- Supports updating (writing) asset tag in Vital Product Data (VPD).

Known Issues with AD339A

Following is a list of the known problems of AD339A:

- JAGag47127/QXCR1000591312 -- Two out of four ports are not recognized at the EFI level. After boot, the card is fully functional -- all ports are available. LAN boot only needs 1 port and it is usually done via the core LAN. The top two ports always work. This will be fixed in a forthcoming system firmware update. This behavior only occurs when the AD339A is in sd64000 (sx2000 chipset), rx8640, or rx7640 servers.
- JAGag47129 -- EFI ftp put fails with EFI driver. Results in error printed out "snp->undi.transmit() 8000h:4h". The problem only occurs during EFI ftp put (push) not during get (pull). It does not affect LAN boot. It only affects the ability to transfer files out to other systems at the EFI level. This will be fixed in a forthcoming EFI driver update.

Cable Specifications

Operating Distance for 1000Base-T (Copper UTP): Up to 100 meters — Cat 5, Cat 5E, Cat 6

Operating distances for 1000Base-SX using multi-mode fiber optic cable are as follows:

Description (850nm short wavelength laser)	Modal Bandwidth	Operating Distance
50 micron MMF	400 (MHz * km)	2 to 500 meters (6.6 to 1640 ft)
	500 (MHz * km)	2 to 550 meters (6.6 to 1804 ft)

Available HP Fiber Optic Cables:

LC-LC	
221692-B21	2m LC duplex 50/125 Multimode Fibre Channel Cable
221692-B22	5m LC duplex 50/125 Multimode Fibre Channel Cable
221692-B23	15m LC duplex 50/125 Multimode Fibre Channel Cable
221692-B26	30m LC duplex 50/125 Multimode Fibre Channel Cable
221692-B27	50m LC duplex 50/125 Multimode Fibre Channel Cable

LED Information

LEDs are provided to indicate Link Activity and Link Speed as follows:

- For AD337A and AD339A, there are two LEDs:
 - Activity/Link LED = GREEN light ON when link is established; FLASHING when there is data traffic; OFF when link is not established.
 - Speed LED:
 - Orange if speed is 1000Mbit/s.
 - Green if speed in 100Mbit/s.
 - OFF if speed is 10Mbit/s.
- For AD338A, there is only one LED:

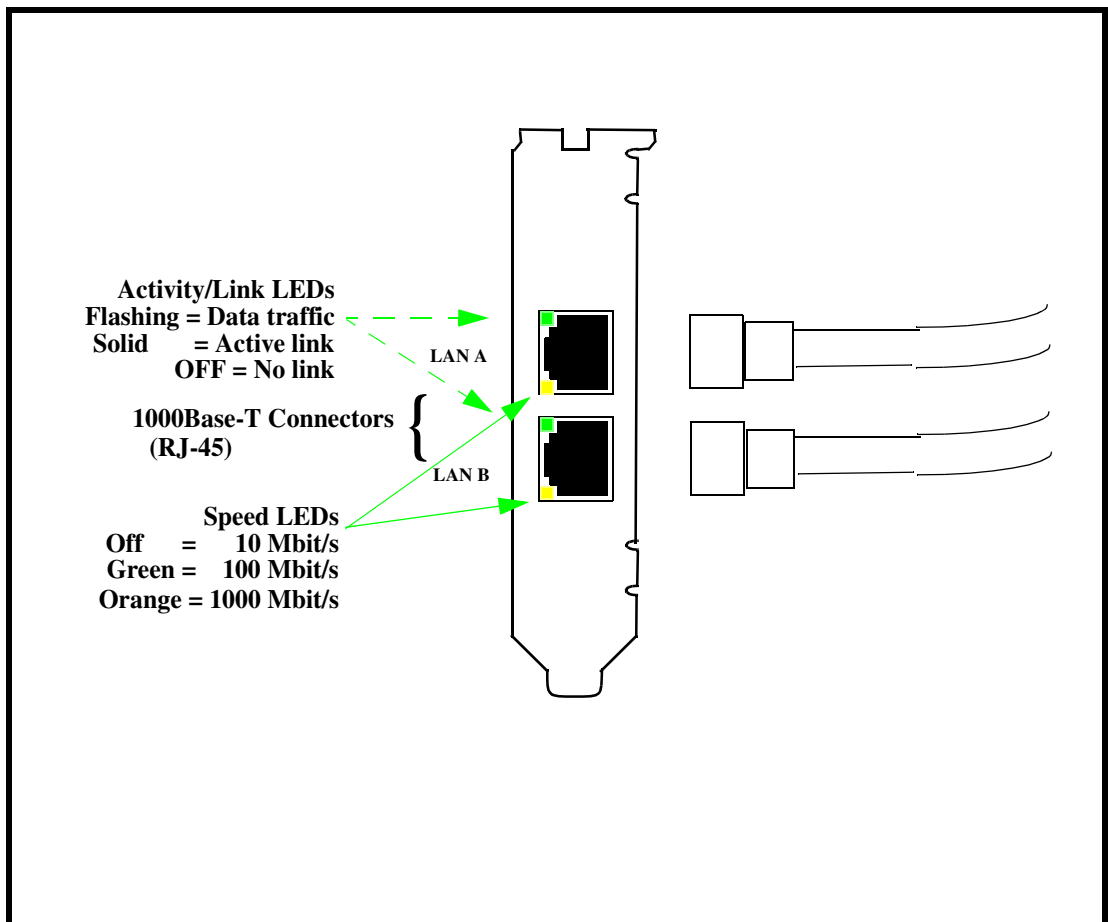
Supporting Systems

- Activity/Link LED: GREEN light ON when link is established; FLASHING when there is data traffic; OFF when link is not established.
- The fiber card operates only at 1000 Mbit/s; so there is no speed LED.

Supporting Systems

For the list of systems that support the cards and the ones that don't, refer to the *Ethernet Support Matrix* on <http://docs.hp.com>. That matrix also tells which OEs support each card, the driver associated with each card, and the number of cards supported per server.

Figure 1 AD337A PCIe 2-Port 1000Base-T Card



A Physical, Environmental, and Regulatory Information

This appendix contains regulatory statements for the United States, Canada, Australia/New Zealand, Japan, and the European community.

Card Physical and Environmental Specifications

Following are the product physical and environmental specifications of the PCIe Gigabit Ethernet Card.

Physical Specifications

Form Factor	PCIe x4 card form-factor
Width	6.9 cm (2.7 in)
Length	16.76 cm (6.6 in)
Thickness	1.66 cm (0.65 in)

Environmental Specifications

Temperature

Degrees F = (1.8 x Degrees C) + 32

Non-operating/ storage Temperature Range (Degrees Celsius)	-40 to +70
Operating Temperature Range (Degrees Celsius)	+5 to 40
Recommended Operating Temperature Range (Degrees Celsius)	+10 to 40
Temperature Shock Immunity - Max Rate of Change	20 C/hr
Non-operating/storage Humidity Range in %RH	90
Recommended Operating Humidity Range @ 22 Degrees Celsius in %RH	40 to 60
Heat Dissipation (in Watts)	17
Maximum kV (if less than 15 kV) with no loss of function	8
Maximum kV (if less than 25 kV) with no component damage	25
Operating Altitude	3,000 meters (9900) ft
Non-operating Altitude	4,500 meters (14850) ft

Electromagnetic Compatibility

This document contains regulatory statements for the United States and the European community.

FCC Statement (For U.S.A.)

Federal Communications Commission Radio Frequency Interference Statement

WARNING This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference and
(2) this device must accept any interference received, including interference that might cause undesired operation.

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 interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and cables, such as those received with your system. Changes or modifications to this equipment not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

Canada

Warning: This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matériel brouilleur du Canada.

EMI Statement (European Community)

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

Laser Safety Statements

Laser Safety Statements - U.S. FDA/CDRH - Optical (laser) Transceiver

CAUTION The optical transceiver provided on the network interface card contains a laser system and is classified as a “Class-I Laser Product” under a U.S. Department of Health and Human Services (DHHS) Radiation Performance standard according to the Radiation Control for Health and Safety Act of 1968. The Class I label and compliance statement are located on the optical transceiver.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

CAUTION Use of controls, adjustments or the performance procedures other than those specified herein may result in hazardous radiation exposure. To prevent direct exposure to laser beam, do not try to open the enclosure.

Laser Safety - European Union - Optical Transceiver Only

CAUTION The optical transceiver provided on the network interface card contains a laser system and is classified as a “Class 1 Laser Product” per EN 60825-1, Safety of Laser products. Class 1 laser products are considered safe and do not pose a biological hazard if used within the data sheet limits and instructions.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

CAUTION Use of controls, adjustments or the performance procedures other than those specified herein may result in hazardous radiation exposure. To prevent direct exposure to laser beam, do not try to open the enclosure.

There are no user serviceable parts nor any maintenance required for the optical transceiver. All adjustments are made at the factory before shipment to customers. Tampering with or any attempt to modify the optical transceiver will result in voided product warranty. It may also result in improper operation of the network card circuitry and possible overstress of the laser source. Device degradation or product failure may result.



DECLARATION OF CONFORMITY
according to ISO/IEC 17050-1 and EN 17050-1

DoC #: CPTOJ-0610-B

Supplier's Name: Hewlett-Packard Company
Supplier's Address: 8000 Foothills Blvd, Roseville CA 95747 USA

declares, that the product
Product Name and Model: HP PCIe 4-port 1000Base-T card, AD339A;

Regulatory Model Number:¹⁾ CPTOJ-0610-4P

Product Options: All

conforms to the following Product Specifications and Regulations:

EMC: Class A
CISPR 24:1997 + A1:2001 + A2:2002
CISPR 24:1997 + A1:2001 + A2:2002
FCC CFR 47 Part 15
AS/NZS CISPR 22:2004EN 55022:1994 + A1:1995 + A2:1997
EN 55022:1998 + A1:2000 + A2:2003
EN 55024:1998 + A1:2001 + A2:2003

Safety:
EN 60950-1:2001
CNS 14336 2004
EN 60825-1:1994 + A1:2002 + A2:2001
AS/NZS 60950.1:2003

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
The product herewith complies with the requirements of the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC and carries the CE-marking accordingly.

Additional Information:

1) This product is assigned a Regulatory Model Number which stays with the regulatory aspects of the design. The Regulatory Model Number is the main product identifier in the regulatory documentation and test reports, this number should not be confused with the marketing name or the product numbers.

Cupertino CA Feb
19, 2008

Tom Le,
Hardware Engineer

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