

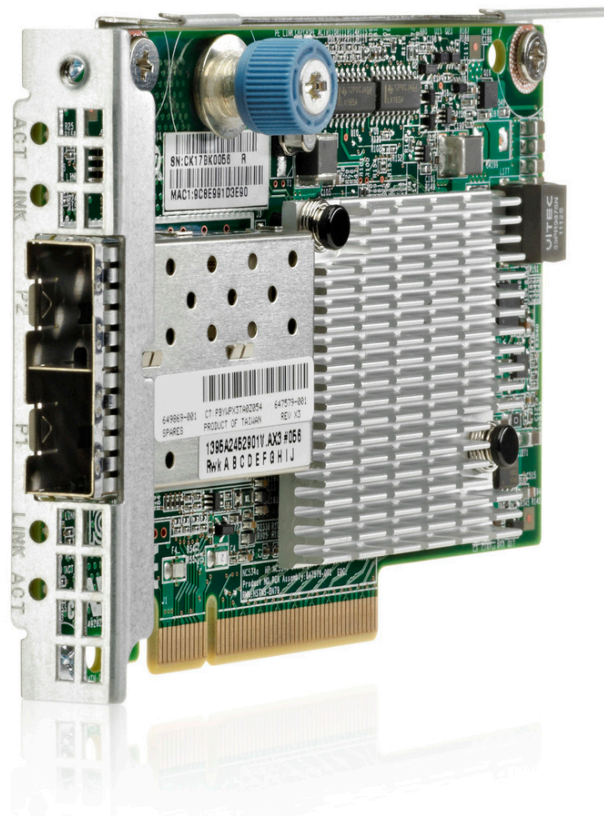
Overview

HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter

The HPE Ethernet 10Gb 2-port 530FLR-SFP+ adapter is a dual-port 10GBASE-T adapter, featuring the 57810S 10 Gb Ethernet solution from QLogic in a PCIe 2.0 compliant form factor designed for HPE ProLiant Gen8 and Gen9 rack servers. The HPE 530FLR-SFP+ Adapter delivers full line-rate performance across all ports with low power consumption, utilizing CAT 6A UTP cabling with distances up to 100 meters. Providing high performance Ethernet connectivity, it is ideal for virtual server and cloud computing environments. It supports enterprise class features such as VLAN tagging, adaptive interrupt coalescing, MSI-X, NIC teaming (bonding), Tunneling offloads (NVGRE, VxLAN), Receive Side Scaling (RSS), jumbo frames, PXE boot) and virtualization features including SR-IOV, Network Partitioning (NPAR), VMware NetQueue and Microsoft VMQ.

For more effective utilization of the 10GbE bandwidth, the HPE 530FLR-SFP+ offers Switch Independent Network Partitioning (NPAR) which enables segmentation of each 10GbE port into four virtual ports, with flexible allocation of bandwidth to each port. Allowing IT organizations to improve resource utilization while lowering infrastructure and operational costs.

Support for HPE Sea of Sensors 3D Technology enhances server performance while reducing energy use and expense.



Models

HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter

647581-B21

Overview

HPE Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter

684210-B21

Kit Contents

- HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- Quick install card
- Product warranty statement

Compatibility

Servers

ProLiant DL (rack-optimized):

- HPE ProLiant DL160 Gen8
- HPE ProLiant DL360p Gen8
- HPE ProLiant DL380p Gen8
- HPE ProLiant DL385p Gen8
- HPE ProLiant DL560 Gen8

ProLiant SL (scalable line):

- HPE ProLiant SL230s Gen8
- HPE ProLiant SL250s Gen8
- HPE ProLiant SL270s Gen8

HPE Apollo Server

- HPE ProLiant XL220a Gen8 v2

NOTE: This is a list of supported servers. Some may be discontinued.

Standard Features

Product Features

- Flexible-LOM for select HPE Rack servers
- Industry-leading throughput performance
- Up to 40Gb/s bi-directional near line rate throughput
- Hardware acceleration TCP/IP/UDP stateless offloads, as well as for TCP Offload Engine (TOE)
- Improved small packet performance
- Tunnel offload support (NVGRE, VXLAN)
- Integrated PHY and MAC
- Support for Preboot eXecution Environment (PXE)
- Optimized for virtual server environments with support for Network Partitioning (NPAR) and Single-Root I/O Virtualization (SR-IOV)
- PXE, Jumbo Frames, Checksum & Segmentation Offload, IPv6 and RSS
- On chip temperature monitor (Sea of Sensors)
- Field replaceable and upgradeable

Dual-port 10 Gigabit Ethernet Throughput

The HPE 530FLR adapter delivers 20,000 Mbps full duplex Ethernet transfer rate per port (40 Gbps aggregate full duplex), providing the network performance needed to improve response times and alleviate bottlenecks that impact performance of next generation data centers. 10Gb Ethernet bandwidth is ideal for high performance computing, database clusters, and more.

Jumbo Frames

The HPE 530FLR adapter supports jumbo frames (also known as extended frames), permitting up to a 9K byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over 5X the size of a standard 1500-byte Ethernet frame. With jumbo frames, networks can achieve higher throughput performance and greater CPU utilization. These attributes are particularly useful for database transfer and tape backup operations.

DPDK

The HPE 530FLR adapter supports DPDK with benefit for packet processing acceleration and use in NFV deployments

TCP/IP Stateless Offloading

TCP, IP, UDP checksum offload, Large Send Offload (LSO), TCP, Segmentation Offload (TSO). These features optimize host efficiency, leaving the CPU available for other duties.

MSI and MSI-X

Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores.

802.1Q VLANs

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HPE 530FLR adapter to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance. VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance.

Tunnel Offload

Minimize the impact of overlay networking on host performance with tunnel offload support for VXLAN and NVGRE. By offloading packet processing to adapters, customers can use overlay networking to increase VM migration flexibility and network scale with minimal impact to performance. HPE Tunnel Offloading increases I/O throughput, reduces CPU utilization, and lowers power consumption. NVGRE tunnel offload supports Microsoft OS environments and VxLAN supports select VMware and Linux (RHEL and SUSE) environments.

TOE

TCP/IP Offload Engine (TOE) shifts the processing of data in the TCP protocol stack from the server CPU to the adapter's processor, freeing server CPU cycles for other operations.

Single-Root I/O Virtualization

Single-Root I/O Virtualization (SR-IOV) provides a mechanism to bypass the host system hypervisor in virtual environments providing near metal performance and server efficiency. SR-IOV provides mechanism to create multiple Virtual Functions (VFs) to share single PCIe resources. The device supports SR-IOV with appropriate

Standard Features

server BIOS and OS support.

Optimized for Virtualization

I/O Virtualization support for VMware NetQueue and Microsoft VMQ help meet the performance demands of consolidated virtual workloads.

FlexibleLOM slot Compatibility

Compatible with HPE FlexibleLOM slot for select HPE Rack servers

Network Adapter Teaming

The HPE 530FLR adapter support for NIC teaming helps IT administrators increase network fault tolerance and increased network bandwidth, The team of adapters can work together as a single virtual adapter. The HPE 530FLR provides support for several different types of teaming enabling IT administrators to optimize availability, improve performance and help reduce costs

Network Partitioning (NPAR)

The HPE 530FLR-SFP+ supports Network Partitioning (NPAR) for ProLiant Gen8 and Gen9 rack servers. Allowing administrators to configure a 10Gb port as four separate partitions or physical functions. Each PCI function is associated with a different virtual NIC. To the OS and the network, each physical function appears as a separate NIC port.

Network Management

Management Support

The HPE 530FLR adapter can be administered from HPE Systems Insight Manager (SIM). The adapters can be managed individually or in teams, providing SNMP based statistics for reporting purposes. The HPE 530FLR adapter can also be managed by other applications with SNMP support.

Server Integration

Server Integration The HPE 530FLR adapter is a validated, tested, and qualified solution that is optimized for HPE ProLiant servers. Hewlett Packard Enterprise validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HPE Intelligent Provisioning and HPE Systems Insight Manager that simplify network management.

This approach provides a more robust and reliable networking solution than offerings from other vendors and provides users with a single point of contact for both their servers and their network adapters.

Configuration Utilities

Each HPE 530FLR ships with a suite of operating system-tailored configuration utilities that allow the user to enable initial diagnostics and configure adapter teaming. This includes a patented teaming GUI for Microsoft Windows operating systems. Additionally, support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations.

LED Indicators

The colored LEDs on each port of the HPE 530FLR adapter indicate link status and link activity.

Preboot eXecution Environment (PXE)

PXE allows the server to boot over the network and download software residing in the network.

HPE Sea of Sensors 3D

Support for HPE's Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can kick on fans and make other adjustments to reduce energy usage. What makes it better is the upgrade from all six fans kicking on at one time to a new system where only one kicks on - the one in proximity of the area that started heating up - thus reducing the amount of energy used for cooling.

Standard Features

Warranty

Maximum: The remaining warranty of the HPE product in which it is installed (to a maximum three-year, limited warranty).

Minimum: One year limited warranty.

Additional information regarding worldwide limited warranty and technical support is available at:

<http://h17007.www1.hp.com/us/en/enterprise/servers/warranty/index.aspx#.V4e3tPkrJhE>

Service and Support

Service and Support

HPE Technology Services

HPE Technology Services offers you consultants and support experts to solve your most complex infrastructure problems. We help keep your business running, boost availability, and avoid downtime.

Protect your business beyond warranty with HPE Care Pack Services

When you buy HPE Options, it's also a good time to think about what level of service you may need. HPE Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

HPE Foundation Care services deliver scalable support-packages for Hewlett Packard Enterprise industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HPE Collaborative Support. If you are running business critical environments, Hewlett Packard Enterprise offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response.

Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, Hewlett Packard Enterprise can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

Recommended HPE Care Pack Services for optimal satisfaction with your HPE product

Recommended Services

3-Year HPE 24x7 4 hour Response, Hardware Support Onsite Service

Provides you with rapid remote support and if required an Hewlett Packard Enterprise Authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.

<http://h20566.www2.hp.com/portal/site/hpsc?ac.admitted=1467740454177.125225703.1938120508>

OR

3-Year HPE 24x7 4 hour Response, HPE Collaborative Support

Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HPE. If the problem is with HPE HW, the representative will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. In case, the issue is with HPE or supported third-party software product and cannot be resolved by applying known fixes, Hewlett Packard Enterprise will contact the third-party vendor and create a problem incident on your behalf.

HPE ProLiant Server Hardware Installation

Provides for the basic hardware installation of Hewlett Packard Enterprise branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner

<https://www.hp.com/h20195/v2/GetDocument.aspx?docname=5981-9356EN>

Related HPE Care Pack Services to enhance your HPE product experience

Related Services

3-Year HPE 24x7 4 hour Response, Proactive Care or Critical Advantage

Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you

<http://h20566.www2.hp.com/portal/site/hpsc?ac.admitted=1467740454177.125225703.1>

Service and Support

OR

3-Year HPE 6-hour Onsite Call-to-Repair, HPE Collaborative Support

Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HPE Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HPE. In case, the issue is with HPE or supported third-party software product and cannot be resolved by applying known fixes, Hewlett Packard Enterprise will contact the third-party vendor and create a problem incident on your behalf.

HPE Proactive Select Service

Provides a flexible way to purchase HPE best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. <https://www.hpe.com/h20195/v2/GetDocument.aspx?docname=4AA3-8855ENW&search=4AA3-8855ENW>

Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more <http://h20564.www2.hpe.com/hpsc/doc/public/display?docId=c04844073>

HPE Support Center

Personalized online support portal with access to information, tools and experts to support Hewlett Packard Enterprise business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers. Learn more <https://www.hpe.com/us/en/support.html>

The HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HPE Insight Remote Support and HPE Support Center are available at no additional cost with a HPE warranty, HPE Care Pack or Hewlett Packard Enterprise contractual support agreement.

*The Hewlett Packard Enterprise Support Center Mobile App is subject to local availability

Parts and materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service.

Warranty / Service Coverage

For ProLiant servers and storage systems, this service covers HPE-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HPE as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit: <https://www.hpe.com/us/en/servers>

Related Options

Direct Attach Cable	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 0.5m Direct Attach Copper Cable	487649-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 1m Direct Attach Copper Cable	487652-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 3m Direct Attach Copper Cable	487655-B21
	HP BladeSystem c-Class 10GbE SFP+ to SFP+ 5m Direct Attach Copper Cable	537963-B21
	HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C

NOTE: Direct Attach Cable (DAC) must be purchased separately for copper environments.

Fiber Optic Modules	HP BladeSystem c-Class 10Gb SFP+ SR Transceiver	455883-B21
	HP BladeSystem c-Class 10Gb SFP+ LR Transceiver	455886-B21

NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.

Fiber Optic Cables	HPE LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable	AJ833A
	HPE LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable	AJ834A
	HPE LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable	AJ836A
	HPE LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable	AJ837A
	HPE LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable	AJ838A
	HPE LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable	AJ839A

NOTE: Fiber transceivers and cables must be purchased separately for fiber-optic environments.

Additional Supported Cables (Plug into HPN5900)	HPE FlexNetwork X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable	JD095C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable	JD096C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	JD097C
	HPE FlexNetwork X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable	JG081C
	HPE FlexNetwork X240 10G SFP+ SFP+ 7m Direct Attach Copper Cable	JC784C
	HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 1m Direct Attach Copper Splitter Cable	JG329A
	HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 3m Direct Attach Copper Splitter Cable	JG330A
	HPE FlexNetwork X240 40G QSFP+ to 4x10G SFP+ 5m Direct Attach Copper Splitter Cable	JG331A

Additional Supported Cables (Plug into HPN6600)	HPE X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable	J9281B
	HPE X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable	J9283B
	HPE X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable	J9285B

Technical Specifications

General Specifications	Network Processor	QLogic 57810S chipset	
	Data Rate	Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth.	
	Bus Type	PCI Express v2.0 (Gen 2) x8 (FlexibleLOM slot)	
	Form Factor	FlexibleLOM	
	IEEE Compliance	802.3, 802.1ab, 802.3x, 802.3ad, 802.3p, 802.1q, 802.3ae, 802.1Qau, 802.3ap	
Power and Environmental Specifications	Operating	Temperature	32° to 131° F (0° to 55° C)
		Humidity	10% to 90% non-condensing
	Power	<12W	
	Emissions	USA: FCC Part 15 Class A; Canada: ICES--3, Issue 4; Japan: VCCI V3 (2010.04) Class A; International: EN55022:2006 + A1:2007 Class A; International: EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008; Taiwan: BSMI, CNS13438 (2006) Class A; Australia/New Zealand (AS/NZS): EN55022:2006+A12007 class A; Korea: KN22 Class A, KN24	
	Safety	6 of 6	
	Other	UL Mark (USA and Canada) CE Mark EN 60590	

Operating System Support **Microsoft:**
 Microsoft Windows Server 2008 SP2 and R2 w/SP1 (x86 and x64)
 Microsoft Windows Server 2012, 2012 R2
 Microsoft Windows Hyper-V 2008 R2 w/SP1, 2012, 2012 R2

Linux:
 Red Hat Enterprise Linux (RHEL) 5, 6 and 7

NOTE: For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix:

http://h17007.www1.hp.com/us/en/enterprise/servers/supportmatrix/redhat_linux.aspx#.V4e8tPkrJD8

Environment-friendly Products and Approach **End-of-life Management and Recycling**
 Hewlett Packard Enterprise offers end-of-life Hewlett Packard Enterprise product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: <http://www8.hp.com/us/en/hpe/hp-information/livingprogress/>. To recycle your product, please go to: <http://www8.hp.com/us/en/hpe/hp-information/livingprogress/> or contact your nearest Hewlett Packard Enterprise sales office. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise web site at: <http://www8.hp.com/us/en/hpe/hp-information/livingprogress/>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HPE OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

Summary of Changes

Date	Version History	Action	Description of Change
21-Oct-2016	From Version 22 to 23	Changed	Add DPDK support and update servers
23-Sep-2016	From Version 21 to 22	Changed	Overview, Standard Features, Service and Support, Related Options, Technical Specifications sections were updated.
09-Sep-2016	From Version 20 to 21	Changed	Overview, Compatibility and Related Options sections were updated.
		Removed	SKUs deleted in Related Options sections: 593722-B21, 647594-B21, 615732-B21, 652497-B21, 593717-B21, 614203-B21, 656596-B21, 665249-B21, 716591-B21, 718904-B21, 629135-B21, 665240-B21, 647581-B21, 665243-B21, 700699-B21, 717491-B21, 629138-B21, 700759-B21, 700751-B21, 629142-B21.
22-Jul-2016	From Version 19 to 20	Changed	QuickSpecs sections were updated.
		Removed	Obsolete SKUs were deleted: 503746-B21.
19-Jun-2015	From Version 18 to 19	Changed	Compatibility, Standard Features, Related Options and Technical Specifications sections were updated.
		Removed	Obsolete SKUs 221691-B21, 221691-B22, 221691-B23, 221692-B21, 221692-B22, 221692-B23, 221692-B26, 221692-B27, 412648-B21, 435508-B21, 394791-B21, 394793-B21, 538696-B21, 458492-B21, 468332-B21, 489892-B21, 581201-B21
28-Nov-2014	From Version 17 to 18	Changed	Overview, Standard Features and Technical Specifications sections were updated
		Added	SKU Added on Models: 684210-B21
10-Sep-2013	From Version 16 to 17	Changed	10 Gigabit Server Adapters and FlexibleLOM Adapters were revised.
01-Mar-2013	From Version 15 to 16	Changed	Updated the Related Options Section.
19-Feb-2013	From Version 14 to 15	Changed	Updated the Overview Section, Standard Features and Related Options Section.
04-Jan-2013	From Version 13 to 14	Changed	A description and SKU change was made in the Related Options section.
04-Dec-2012	From Version 12 to 13	Changed	Changes made in the Compatibility and Related Options sections.
10-Oct-2012	From Version 11 to 12	Changed	Change made in the Compatibility section only.
28-Sep-2012	From Version 10 to 11	Changed	Changes made in Related Options section.
24-Sep-2012	From Version 9 to 10	Changed	Changes made in Compatibility section.
31-Aug-2012	From Version 8 to 9	Removed	Removed a note in the Related Options sections.
20-Aug-2012	From Version 7 to 8	Changed	Changes made in Overview and Related Options sections.
13-Jul-2012	From Version 6 to 7	Added	Added Fiber Optic Module to Related Options.
12-Jun-2012	From Version 5 to 6	Changed	Changes were made to General Specifications.
08-Jun-2012	From Version 4 to 5	Changed	Changes were made to the Compatibly, Related Options and Technical Specifications sections.
18-May-2012	From Version 3 to 4	Changed	Minor edit was made in Operating System Support.
30-Mar-2012	From Version 2 to 3	Changed	Minor edit was made in Operating System Support.
09-Mar-2012	From Version 1 to 2	Changed	Changes made in the Overview, Standard Features and Technical Specifications sections.

Summary of Changes



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