



Product Bulletin

Product Bulletin:

PCI-X and PCIe Cards:

X1005A-R5, X1007A-R5, X1006A-R5, X1008A-R6, X1106A-R6, X1107A-R6, X1117A-R6, X2027B-R5, X1049A-R6, PCI-X and PCIe Cards

Revision History

8 Aug 2006 — Initial version
14 Aug 2006 — Revised the releases that the Add Parts and configured cards are available
14 Sep 2006 — Corrected Data ONTAP support on the cards
21 Nov 2006 — Added X1006A-R5 and X1049A-R6 and changed the title from PB-PCI-X_Cards-0806 to PB-PCI-X_and_PcLe_Cards-0806
4 Dec 2006 — Updated title to include the list of cards
9 Dec 2006 — Added warning for empty slot on 3000 series
2 Feb 2007 — Updated information in the What's New section
20 Jul 2007 — Added X1008A-R6
21 Aug 2007 — Removed reference to 1310nm
10 Dec 2007 — Added pointer to Cable Marketing Part Number Change bulletin
24 Aug 2009 — Updated bulletin template, added X1107A-R6, X1106A-R6 and X1049A-R6 on FAS2050, and changed the title from PB-PCI-X_and_PcLe_Cards-0806 to PB-PCI-X_and_PcLe_Cards-0909
28 Sep 2009 — Added "Exception Process" for ordering X1107A until it is supported on DOT 8.0
06 Oct 2009 — Updated release date for X1107A
20 Oct 2009 — Updated "Exception Process" for ordering X1107A until it is officially released
06 Jan 2010 — Removed all restrictions from ordering X1107A and removed "Exception Process" section
15 Sep 2010 — Updated Twinax cables for X1107A
8 Nov 2010 — Added X1117A-R6, FAS3200, FAS6200, removed X1029B-R6, X1036B-R6, R200, FAS900

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This product bulletin informs NetApp sales and NetApp partners about new or changed NetApp® products or services.

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1. Summary

This product bulletin announces the following cards in 'Add Parts' and configured systems: **X1005A-R5, X1007A-R5, X1006A-R5, X1008A-R6, X1106A-R6, X1107A-R6, X1117A-R6, X2027B-R5, X1049A-R6, PCI-X, and PCIe Cards.**

The **X1117A-R6** is a RoHS-compliant dual-port 10GbE PCIe SFP+ Style Network Interface Card.

- Supported on FAS6200 series platforms;

The **X1107A-R6** is a RoHS-compliant dual-port 10GbE PCIe SFP+ Style Network Interface Card. The **X1049A-R6** is a RoHS-compliant quad-port copper (RJ-45 connector) PCIe Network Interface Card: The **X1006A-R5** was a RoHS-compliant quad-port GbE copper (RJ-45 connector) PCIe TOE Network Interface Card. X1006A-R5 was removed from the price list in November 2008.

- Supported on FAS3040, FAS3070, FAS3100, FAS3200 series, and FAS6000 series platforms;
the X1049A-R6 is also supported on the FAS2050 platform with Data ONTAP® 7.3.2 and the FAS6200 series platforms with Data ONTAP® 8.0.1

The **X1106A-R6** is a RoHS-compliant single-port 10GbE optical short reach (LC connector) PCIe Network Interface Card:

- Supported on FAS2050 platform only

The **X2027B-R5** is an LVD/SE 2-channel, SCSI, PCI-X copper card and is the RoHS-compliant replacement for the previous X2027A card. The X2027A card, which was not RoHS compliant, is no longer available as of the release of the June Quote Tool:

- Supported on FAS3040, FAS3070, and FAS6000 series platforms

The **X1008A-R6** is a RoHS-compliant dual-port 10GbE optical short reach (LC connector) PCIe TOE Network Interface Card.

- Supported on FAS3040, FAS3070, FAS3100 series, and FAS6000 series platforms;

The **X1005A-R5** is a RoHS-compliant 10GbE optical short reach (LC connector) PCI-X TOE Network Interface Card (NIC). The **X1007A-R5** was a RoHS-compliant quad-port GbE copper PCI-X (RJ-45 connector) TOE Network Interface Card: X1007A-R5 was removed from the price list in November 2008.

- Supported on FAS3020, FAS3050, and FAS6000 series platforms

2. What's New?

The **X1107A-R6** is the first NIC with a new-style SFP+ type connection. The X1117A-R6 is the second NIC NetApp has released with the new-style SFP+ type connectors. The cards ships with a bare cage. You can elect to use a short reach (SR) SFP+ module (NOTE: It's dual port so you need two), which requires an LC fiber optic cable, or you can use twinax copper cables that have an SFP+ connector embedded on the ends of the cable. The Quote Tool only offers Cisco or Brocade twinax cables. We have found most 10GbE switch vendors are prescriptive about which vendor's twinax cables can be used. It is best for customers to purchase twinax cables from the switch vendor they are using rather than from NetApp. The X1107A-R6 NIC requires an X6563-R6 SFP. The X1117A-R6 requires an X6569-R6 SFP.

The **X1106A-R6** is a low-power, single-port, non-TOE NIC designed specifically for the FAS2050. It has a built-in XFP connector that requires an LC fiber optic cable. It is not qualified in any other platform. It requires Data ONTAP 7.3.2.

We have uncovered a number of issues with the 10GbE TOE cards and strongly recommend that customers run Data ONTAP 7.3.2. In 7.3.2, TOE function has been defaulted to Off. Most customers will not see any adverse effect on performance because TOE is turned off.

The TOE cards, **X1005A-R5** and **X1007A-R5**, consume 25 watts of power. Therefore 3020 and 3050 series platforms are limited to a maximum of two cards of either type. The third slot must be left empty. Similarly in the 6000 series only two of the three PCI-X slots may be populated.

Some of these cards were originally introduced in May 2006, limited to the FAS6030/c and FAS6070/c systems. All of the TOE NICs that run in Data ONTAP releases prior to 7.2L2, 7.2.1, and 7.1.2 do not have TOE function turned on. The PCIe TOE running 7.2.3 does not have the TOE turned on. In Data ONTAP 7.2L2, 7.2.1, and 7.1.2 the TOE function is turned on. Data ONTAP has an extremely efficient network stack, so turning on TOE will not improve performance as much as it might in other general-purpose operating systems. We do see substantial improvement for large-block (32KB) transfers and for networks that cannot use jumbo frames. Small-block (4KB) random transfers see little change. Beginning with Data ONTAP 7.3.2, the TOE is off by default but can be turned on by CLI commands. In Data ONTAP 8.0 the TOE will be off permanently. We are moving away from TOE technology and employing Stateless Offload technology which will produce better performance.

3. Sales and Customer-Ready Tools (Training, SE, Customer Presentations, Datasheets, Sales Guides)

None at this time.

Field Code Changed

4. System Requirements

Supported Platforms

Part Number	FAS2050	FAS/V3020 FAS/V3050	FAS/V3040 FAS/V3070	FAS/V3100	FAS/V6000	FAS/V3200	FAS/V6200
X1005A-R5		X			X		
X1006A-R5			X	X	X		
X1007A-R5		X			X		
X1008A-R6			X	X	X		
X1106A-R6	X						
X1107A-R6			X	X	X	X	
X1049A-R6	X		X	X	X	X	
X1117A-R6							X
X2027B-R5		X			X		

5. Product Information

Starting in the September 2009 release of the Quote Tool, these cards will be available for customers running the following versions of Data ONTAP:

Part Number	Description	Discount Category Code	Supported ONTAP
X1005A-R5	NIC, TOE,1-Port,10GbE,Fi,PCI-X,R5	A	7.2
X1006A-R5	NIC,TOE,Quad-Port,GigE,CU,PCIe,R5	A	7.2L2 and 7.2.1
X1007A-R5	NIC,TOE,Quad-Port,GigE,CU,PCI-X,R5	A	7.2
X1008A-R6	NIC, TOE,2-Port,10GbE,Fi,PCIe,R6	A	7.2.3 but 7.3.2 recommended
X1106A-R6	NIC,1-Port,10GbE,Fiber,PCIe,R6	A	7.3.2
X1107A-R6	NIC,2pt,10GbE,BareCage SFP+ style,PCIe,R6	A	7.3.2 and 8.0.1
X1049A-R6	NIC,Quad-Port,GigE,CU,PCI-X,R5	A	7.2L2, 7.2.1 and 8.0.1
X1117A-R6	NIC II,2pt,10GbE,BareCage SFP+ style,PCIe,R6	A	8.0.1
X2027B-R5	LVD/SE 2-chI,SCSI,PCI-X,320MB,Cu,R5	A	7.0.5, 7.1.1 and 7.2

The 10GbE TOE NIC is capable of distances up to 300 meters with OM3 class fiber optic cables. To deploy Host/Switch connectivity with extended distance, customers must adhere to the following requirements:

- Must use 50-micron optical cable that meets this specification: LC-LC Duplex 50/125 Plenum 2000Mhz/km Cable
- For cable length greater than 30 meters, customers must purchase directly from cable vendors. See ordering information at http://now.netapp.com/NOW/knowledge/docs/cables/optical_cable/ for details.
- In order to achieve the maximum 300-meter distance, the interconnect must be a direct point-to-point optical cable with no device (such as a patch panel) in between.
- The distance will be reduced when interconnect is routed through an intermediate passive device (such as a patch panel) due to degradation in optical signal quality (about 0.3 dB loss per passive device). The actual distance reduction will vary. The only practical way for establishing the maximum supported distance is to test the desired configuration in the actual customer environment.

For optical LC/LC interconnect cable lengths greater than 30 meters, up to 300 meters, contact

NetApp qualified supplier Fujikura (FJK).

Use part number FJK P/N: PDL-PDL-P16Z-002-L-XXX, in which XXX designates length in meters.

Please see http://now.netapp.com/NOW/knowledge/docs/cables/optical_cable/ for more information.

NetApp offers 5-meter and 30-meter cables with LC connectors at both ends or with an LC on one end and an SC on the other to accommodate some Cisco switches that use SC connections:

X6536A-R6 Cable, Optical, 50u, 2000MHz/Km/MM, LC/LC, 5M, R6
X6537A-R6 Cable, Optical, 50u, 2000MHz/Km/MM, LC/LC, 30M, R6
X6546A-R6 Cable, Optical, 50u, 2000MHz/Km/MM, LC/SC, 30M, R6
X6547A-R6 Cable, Optical, 50u, 2000MHz/Km/MM, LC/SC, 5M, R6
X6553A-R6 Cable, Optical, 50u, 2000MHz/Km/MM, LC/LC, 2M, R6
X6554A-R6 Cable, Optical, 50u, 2000MHz/Km/MM, LC/LC, 15M, R6

You may run into situations in which the customer wants to use existing cable runs of older cables that have less than 2000MHz/km bandwidth. Use the following table as a guideline for distances you can expect to achieve:

Wavelength (nanometers)	Core Size (microns)	Modal Bandwidth (MHz/km)	Distance
850	62.5	160	26 meters
	62.5	200	33 meters
	50	400	66 meters
	50	500	82 meters
	50	2000	300 meters

Some customers may want to reuse NetApp supplied cables X6515A, X6516A, X6518A, or X6519A. Although we expect these would perform satisfactorily for direct connection (i.e., no patch panels), we want you to encourage customers to purchase new 2000MHz/km bandwidth cables. Using older low-bandwidth cables will become a problem when the customer wants to extend the distance by running through patch panels.

6. Regulatory Compliance

Products need to be validated against the NetApp Safety/EMI Regulatory Compliance List prior to order submission. This is required to ensure that products are being sold only in the countries in which NetApp has received regulatory compliance certification. This information can be found in the Field Portal by searching under "Compliance, Policies and Procedures" or following the links below:

- [RoHS Compliance](#)
- [Safety/EMI Regulatory Compliance \(XLS\)](#)
- [WEEE Compliance](#)

7. Warranty and Service

Standard three-year warranty period starts/ends with the warranty of the platform that the card is plugged into.

8. Additional Information

Contact Information: Please contact Product Manager, Paul Norman (408-822-6288 or paul.norman@netapp.com) with questions concerning this bulletin.

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