



# **Alacritech<sup>®</sup> Scalable Network Accelerator<sup>™</sup>**

## **Hardware Installation Guide**

January 2009

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## Preface

### Disclaimer

The information in this document is subject to change without notice. Alacritech reserves the right to change any portion of these products for reasons such as improving performance or enhancing functionality. Alacritech assumes no liability arising out of the application or use of these products for anything other than its intended purpose.

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This document describes Scalable Network Accelerators (SNAs) from Alacritech, Inc. This document is the official reference source for all revisions/releases of these products until rescinded by an update.

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## Organization of This Guide

This guide is the primary reference and operation guide for Alacritech Accelerators and contains the following sections:

**Chapter 1 – Introduction** describes Alacritech Accelerators and the Dynamic TCP Offload technology on which they are based.

**Chapter 2 - Hardware Installation** includes the specifications for the hardware and the procedure required to install the hardware component.

**Chapter 3 – Software Installation and Support** provides information on installing the software and receiving technical support.

**Appendix A – Hardware Warranty and Information** provides the text of the Limited Lifetime Hardware Warranty for the hardware component. This section also includes instructions for returning a defective product, the text of the Limitation of Liability and Remedies statement, and Compliance and Conformity statements.

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## 1 Introduction

This guide describes how to install Alacritech® Accelerators in servers with PCI-X or PCI Express (PCIe) architecture.

### 1.1 Description

Alacritech Scalable Network Accelerators (SNAs) are single-port or multi-port network interface cards (NICs) that employ Alacritech's Dynamic TCP Offload technology, which uses an innovative application-specific integrated circuit (ASIC) for protocol processing.

The Dynamic TCP Offload increases server performance and efficiency in two specific ways:

- TCP/IP Protocol processing is offloaded onto the Accelerator, freeing the CPU for application processing and maximizing throughput
- A unique ASIC utilizes an Internet Protocol Processor (IPP), optimized for TCP/IP protocol processing, which delivers faster performance than general purpose CPUs

Dynamic TCP Offload eliminates the burden of TCP/IP protocol processing on the host CPU. With protocol processing offloaded onto the Accelerator, the CPU is freed for application processing, boosting both network and server performance.

### 1.2 Supported Accelerators

This guide covers the following Accelerators:

- SEN3000 Series 10 Gigabit Accelerators
- SEN2000 and SEN2100 Series Gigabit Accelerators

## 1.3 Specifications

### 1.3.1 Gigabit Accelerators

Specification	SEN2001XT	SEN2002XT	SEN2102ET	SEN2104ET	SEN2002XF	SEN2102EF	SEN2104EF
Port Speeds	IEEE Auto-Negotiation, 10/100/1000Mbps, Full Duplex						
Connectors	RJ-45				SC/PC multi-mode duplex		
Bus Type	PCI-X 1.0a*		PCIe 1.0a x4		PCI-X 1.0a*	PCIe 1.0a x4	
Reliability	MTBF 250,000 hours						
Power	3A@3.3V	1.5A@3.3V 1.0A@12V	2A@3.3V 1.5A@12V	2A@5V	1.2A@3.3V 1.0A@12V	1.2A@3.3V 1.5A@12V	
Safety	UL, UL/c, IEC60950						
Environmental Factors	Operating temperature: 0 to 55° C (Minimum Airflow: 150 LFM) Relative humidity: 5% to 85%, non-condensing						
EMC Standards Compliance	FCC, CE, VCCI						
Ethernet Standards	ANSI/IEEE 802.3, 2000 Edition 10BASE-T, 100BASE-TX, 1000BASE-T				ANSI/IEEE 802.3, 2000 Edition 1000BASE-SX		
Diagnostic LEDs	Link speed (10,100,1000) and activity				Link status and activity		

\*: 133 MHz/64-bit bus master PCI-X 1.0a Universal Card Compatible with 32-bit PCI 2.2

### 1.3.2 10 Gigabit Accelerators

Specification	SEN3001EF-SR
Port Speeds	10Gbits, Full Duplex
Connectors	LC/PC multi-mode duplex
Bus Type	PCIe 1.1 x8
Reliability	MTBF 250,000 hours
Power	833mA at 12V
Safety	UL, UL/c, IEC60950
Environmental Factors	Operating temperature: 0 to 55° C (Minimum Airflow: 150 LFM) Relative humidity: 5% to 85%, non-condensing
EMC Standards Compliance	FCC, CE, VCCI
Ethernet Standards	ANSI/IEEE 802.3, 2005 Edition 10GBASE-SR
Diagnostic LED	Link/activity

### 1.4 Operating System Compatibility

For operating system support information, see Alacritech’s website at:  
<http://www.alacritech.com/Support/FAQs/ServerAccelerator.aspx#s1p1q1>

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## 2 Hardware Installation

### 2.1 Hardware Installation Overview

Alacritech Accelerators are designed for servers and storage systems on a Gigabit or 10 Gigabit Ethernet network using TCP/IP. The system they are installed in must have the following features:

- Supported operating system (see Section 1.4).
- One available PCI-X or PCIe slot that matches the bus type of the Accelerator to be installed (see Section 1.3). The PCI-X slot must supply the necessary 3.3 or 5.0V, as specified in Section 1.3.1).
- CD-ROM or compatible drive, or network CD drive for software installation. Alternatively, the drivers can be downloaded from the Alacritech Customer Support site at <http://www.alacritech.com/Support/Downloads/Drivers/Default.aspx>

The network should have the following features, based on the Accelerator to be installed:

- **SEN2001XT, SEN2002XT, SEN2102ET, SEN2104ET:** 1000BASE-T Gigabit Ethernet or 100BASE-TX Fast Ethernet using Category 5 cable with RJ-45 connectors; 10BASE-T Ethernet using Category 3, 4, or 5 cables.
- **SEN2002XF, SEN2102EF, SEN2104EF:** 1000BASE-SX Gigabit Ethernet using multi-mode fiber (62.5/125 $\mu$ m or 50/125 $\mu$ m), with SC/PC connectors.
- **SEN3001EF:** 10GBASE-SR 10 Gigabit Ethernet using multi-mode fiber (62.5/125 $\mu$ m or 50/125 $\mu$ m), with LC/PC connectors.

**Note:** The fiber-based Accelerators are supplied with a dust cover protecting its fiber optic ports. To prevent dust from collecting on the fiber optic lenses, keep the dust cover on the ports at all times when they are not in use. Only remove the dust cover just before you plug in a connector.

## 2.2 Installing the Low Profile Bracket (PCI-X Accelerators Only)

The Accelerator includes a low profile bracket to facilitate installation in a low profile slot. To install an Accelerator in a low profile PCI-X slot, the bracket on the rear of the card will need to be changed with the included low profile bracket.

1. Remove the two 4-40 x 3/16 screws on the bottom side of the card.
2. Install the low profile bracket, making sure that the mounting tabs are on the bottom side of the card and the screws secured from the component (top) side.

To convert an Accelerator from low profile to standard PCI-X, the bracket on the rear of the card will need to be changed to the original bracket.

1. Remove the two 4-40 x 3/16 screws from the topside of the card.
2. Install the standard bracket, making sure that the mounting tabs are on the top (component) side of the card and the screws secured from the bottom side.

## 2.3 Hardware Installation

**Eye safety: The laser-based transceivers used in fiber Accelerators are eye safe under normal operating conditions. However, it is recommended that you never look directly at an active connector (plug or receptacle) without eye protection.**

**Note: Alacritech Accelerators use components that are sensitive to ESD. Proper ESD handling and storage should be followed.**

### 2.3.1 General Procedure

1. Turn off and unplug the computer. Failure to do so could endanger you, and may damage the accelerator or computer.
2. Remove the computer cover, and install the Accelerator in any available PCI-X or PCIe slot as specified for the Accelerator in Section □.
3. Once the Accelerator is installed, replace the computer cover, turn on and boot the computer.

### 2.3.2 PCI-X

For PCI-X, use a 64-bit, 66/100/133MHz PCI-X slot to maximize system performance. Figure 1: Typical 3.3V keyed 64-bit PCI or PCI-X bus slot shows a typical 64-bit PCI or PCI-X slot, however, the documentation for your system should be consulted to verify available PCI slots. Some PCI slots have fasteners, which must be secured in order for the accelerator to function correctly.

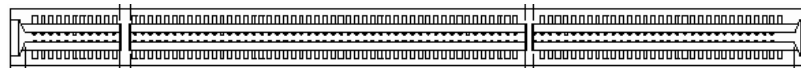


Figure 1: Typical 3.3V keyed 64-bit PCI or PCI-X bus slot

### 2.3.3 PCIe

Before installing the Accelerator, verify on the motherboard that the PCIe slot has the proper PCIe connector type with the number of lanes required for the Accelerator.

- Gigabit: 4 lanes (x4)
- 10 Gigabit: 8 lanes (x8)

Using a PCIe slot that has less than the recommended number of lanes will result in serious performance degradation.

Some PCIe slots are designated by the BIOS only for graphics cards; the Alacritech Accelerators will not function properly in these slots.

### 2.3.4 10 Gigabit SFP+ Transceiver

The SEN3001EF supports 10GBASE-SR SFP+ (Small Form-Factor Pluggable) modules sold by Alacritech under the part number XGSFP+SR. 10GBASE-SR uses multi-mode fiber cables.

When installing the SFP+ transceiver, follow these guidelines:

- Remove any optical patch cords before removing the transceiver. Do not connect patch cords to the transceiver until it has been fully installed.
- You may remove or insert the transceiver while the system is powered on.
- Use minimal pressure when inserting the transceiver. Forcing the transceiver into place will damage the transceiver and SFP+ housing.
- Insert the transceiver until it clicks into place.
- Once the transceiver is installed, you may remove the protective cap. Leave the protective cap in place when the transceiver is not in use.

Other 10GBASE-SR and 10GBASE-LR modules should be compatible with the SFP+ standard, but Alacritech cannot guarantee their performance or compatibility. Using modules from other vendors does not affect the warranty of the card.

The SEN3001EF does not support 10GBASE-SRM, 10GBASE-LRM, or direct attach copper cabling.

## Physical

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## 3 Software Installation and Support

### 3.1 Installing the Accelerator Software

For information about installing driver software, open the **Users Guide.pdf** file in the **doc** directory on the Alacritech Driver Installation CD. The PDF files can be read using Acrobat® Reader software available from Adobe Systems Incorporated at <http://www.adobe.com>.

### 3.2 Readme Files on Your Product CD-ROM

For a range of product information available, please read the readme.html file on the Alacritech Driver Installation CD. To view the files, go to the Alacritech Driver Installation CD and open the file with any web browser.

### 3.3 Alacritech Automated Customer Support

You can reach Alacritech's automated support service 24 hours a day, every day. The service contains the most up-to-date information about Alacritech products. You can access the most current drivers, installation instructions, troubleshooting information, and general product information.

Support: <http://www.alacritech.com/html/techsupport.html>

Corporate: <http://www.alacritech.com>

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## Appendix A Gigabit Hardware Warranty

Affected products: SEN2001XT, SEN2002XT, SEN2002XF, SEN2102ET, SEN2104ET, SEN2102EF, and SEN2104EF.

### **LIMITED LIFETIME HARDWARE WARRANTY**

Alacritech warrants to the original owner that the hardware product delivered in this package will be free from defects in material and workmanship. This warranty does not cover of the product if it is damaged in the process of being installed or improperly used.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE.

This warranty does not cover replacement of accelerator products damaged by abuse, accident, misuse, neglect, normal wear and tear, alteration, repair, disaster, improper installation, or improper testing. If the accelerator product is found to be defective, Alacritech, at its option, will replace or repair the hardware product at no charge except as set forth below provided that you deliver the accelerator product along with a Return Material Authorization (RMA) number (see below), along with proof of purchase, either to the dealer from whom you purchased it or to Alacritech with an explanation of any deficiency.

With the same RMA procedure, at your option, Alacritech will refund your purchase price if the product is found to be defective and is returned within three months of the purchase date.

If you ship the accelerator product, you must assume the risk of damage or loss in transit. You must use the original container and pay the shipping charge.

Alacritech may replace or repair the accelerator product with either new or reconditioned parts, and any accelerator product, or part thereof replaced by Alacritech becomes Alacritech's property. Repaired or replaced accelerator products will be returned to you at the same revision level as received or higher, at Alacritech's option. Alacritech reserves the right to replace discontinued accelerator products with an equivalent current generation accelerator product.

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## Appendix B 10 Gigabit Hardware Warranty

Affected products: SEN3001EF, XGSFP+SR

### **LIMITED THREE-YEAR HARDWARE WARRANTY**

Alacritech warrants to the original owner that the hardware product delivered in this package will be free from defects in material and workmanship. This warranty does not cover of the product if it is damaged in the process of being installed or improperly used.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE ARISING OUT OF ANY PROPOSAL, SPECIFICATION, OR SAMPLE.

This warranty does not cover replacement of accelerator products damaged by abuse, accident, misuse, neglect, normal wear and tear, alteration, repair, disaster, improper installation, or improper testing. If the accelerator product is found to be defective, Alacritech, at its option, will replace or repair the hardware product at no charge except as set forth below provided that you deliver the accelerator product along with a Return Material Authorization (RMA) number (see below), along with proof of purchase, either to the dealer from whom you purchased it or to Alacritech with an explanation of any deficiency.

With the same RMA procedure, at your option, Alacritech will refund your purchase price if the product is found to be defective and is returned within three months of the purchase date.

If you ship the accelerator product, you must assume the risk of damage or loss in transit. You must use the original container and pay the shipping charge.

Alacritech may replace or repair the accelerator product with either new or reconditioned parts, and any accelerator product, or part thereof replaced by Alacritech becomes Alacritech's property. Repaired or replaced accelerator products will be returned to you at the same revision level as received or higher, at Alacritech's option. Alacritech reserves the right to replace discontinued accelerator products with an equivalent current generation accelerator product.

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## **Appendix C      Other Information**

### **Returning a Defective Product**

Before returning any accelerator product, contact Alacritech Customer Support and obtain a Return Material Authorization (RMA) number by using the automated support service at <http://www.alacritech.com/html/techsupport.html>.

If the Customer Support Group verifies that the accelerator product is defective, they will have the RMA department issue you an RMA number to place on the outer package of the accelerator product. Alacritech cannot accept any product without an RMA number on the package.

### **Limitation of Liability and Remedies**

ALACRITECH'S SOLE LIABILITY HEREUNDER SHALL BE LIMITED TO DIRECT, OBJECTIVELY MEASURABLE DAMAGES. IN NO EVENT SHALL ALACRITECH HAVE ANY LIABILITY FOR ANY INDIRECT OR SPECULATIVE DAMAGES (INCLUDING, WITHOUT LIMITING THE FOREGOING, CONSEQUENTIAL, INCIDENTAL, AND SPECIAL DAMAGES) INCLUDING, BUT NOT LIMITED TO, INFRINGEMENT OF INTELLECTUAL PROPERTY, REPROCUREMENT COSTS, LOSS OF USE, BUSINESS INTERRUPTIONS, LOSS OF GOODWILL, AND LOSS OF PROFITS, WHETHER ANY SUCH DAMAGES ARISE OUT OF CONTRACT NEGLIGENCE, TORT, OR UNDER ANY WARRANTY, IRRESPECTIVE OF WHETHER ALACRITECH HAS ADVANCE NOTICE OF THE POSSIBILITY OF ANY SUCH DAMAGES. NOTWITHSTANDING THE FOREGOING, ALACRITECH'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. ALACRITECH 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 may not apply to you.

**CRITICAL CONTROL APPLICATIONS:** Alacritech specifically disclaims liability for use of the accelerator product in critical control applications (including, for example only, safety or health care control systems, nuclear energy control systems, or air or ground traffic control systems) by Licensee or Sublicensees, and such use is entirely at the user's risk. Licensee agrees to defend, indemnify, and hold Alacritech harmless from and against any and all claims arising out of use of the accelerator product in such applications by Licensee or Sublicensees.

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

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## Appendix D Gigabit Environmental Notices

### FCC COMPLIANCE STATEMENT

We, Alacritech Inc., at  
1995 N. 1<sup>st</sup> St  
San Jose, CA 95112  
(408) 287-9997

declare under our sole responsibility that the product(s):

100000, 100001, 100004, 100005, 100007, 100009, SEN1001T, SEN1001F, SES1001T, SES1001F, SEA1001T, SEA1001F, SEN1511XT, SEN1512XT, SEN1522XT, SEN1811XT, SEN1812XT, SEN1822XT, SEN2002XT, SEN2002XF, SEN2001XT, SEN2001XF, SES1811XT, SES1812XT, SES1822XT, SES2002XT, SES2002XF, SES2001XT, SES2001XF, SEA2002XT, SEA2002XF, SEA2001XT, SEA2001XF, SEN2104ET, SEN2104EF, SEN2102ET, SEN2102EF, SES2104ET, SES2104EF, SES2102ET and SES2102EF. Comply 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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device. The device must however be listed as a Class A device because the support equipment used during the testing of the product did not have an FCC DoC. As such, the following FCC statement applies:

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 may find the following booklet prepared by the Federal Communications Commission helpful:

The Interference Handbook

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 004-000-00345-4.

NOTE: In order to maintain compliance with the limits of a Class B digital device, Alacritech requires that you use network cables of a specific quality when connecting this device. For 100BASE-TX operation, your network cables must be Category 5, twisted pair wiring. For 10BASE-T operation, use Category 3, 4 or 5 twisted-pair wiring. If you use this adapter in a residential environment, you must use Category 5 cables.

Changes or modifications not expressly approved by Alacritech could void the user's authority to operate this equipment.

### VCCI Declaration of Conformity

The 100000, 100001, 100004, 100005, 100007, 100009, SEN1001T, SEN1001F, SES1001T, SES1001F, SEA1001T, SEA1001F, SEN1511XT, SEN1512XT, SEN1522XT, SEN1811XT, SEN1812XT, SEN1822XT, SEN2002XT, SEN2002XF, SEN2001XT, SEN2001XF, SES1811XT, SES1812XT, SES1822XT, SES2002XT, SES2002XF, SES2001XT, SES2001XF, SEA2002XT, SEA2002XF, SEA2001XT, SEA2001XF, SEN2104ET, SEN2104EF,

SEN2102ET, SEN2102EF, SES2104ET, SES2104EF, SES2102ET and SES2102EF are Class B products based on the standard of the Voluntary Control Council For Interference by Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。  
取扱説明書に従って正しい取り扱いをして下さい。

### EN Declaration of Conformity

The 100000, 100001, 100004, 100005, 100007, 100009, SEN1001T, SEN1001F, SES1001T, SES1001F, SEA1001T, SEA1001F, SEN1511XT, SEN1512XT, SEN1522XT, SEN1811XT, SEN1812XT, SEN1822XT, SEN2002XT, SEN2002XF, SEN2001XT, SEN2001XF, SES1811XT, SES1812XT, SES1822XT, SES2002XT, SES2002XF, SES2001XT, SES2001XF, SEA2002XT, SEA2002XF, SEA2001XT, SEA2001XF, SEN2104ET, SEN2104EF, SEN2102ET, SEN2102EF, SES2104ET, SES2104EF, SES2102ET and SES2102EF have been tested in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN55022 Class B (CISPR 22), EN55024, and EN60950.

*Compliance to class B may be dependent upon the use of shielded data cables depending upon the host hardware.*

## EU-RoHS Declaration of Conformity

Alacritech 1500, 1800, 2000 and 2100 product families are compliant with the European Parliament RoHS Directive 2002/95/EC the Council of 27 January 2003 on the restriction of certain hazardous substances in electrical and electronic equipment. The following table is provided regarding the names and concentration levels of Hazardous Substances

Name of the Component	Hazardous/Toxic Substance/Elements					
	Lead (PB)	Mercury (Hg)	Cadmium (CD)	Hexavalent Chromium (CR6+)	Polybrominated Biphenyl (PBB)	Polybrominated Diphenyl Ether (PBDE)
Printed Circuit Boards	X	O	O	O	O	O
Software / Documentation CDs	O	O	O	O	O	O
Mechanical brackets, Screws	O	O	O	O	O	O

- X represents that the concentration of a hazardous substance within one or more homogeneous materials of such component exists and that the substance is allowed through one or more exemptions associated with Storage and Networking products as listed within the Annex.
- O represents that no such substances are used or that the concentration is within the aforementioned limits.

*Alacritech believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.*

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## C-ROHS HS/TS Substance Concentration Chart

Information on HS/TS Substances according to Chinese Standards

In accordance with China's Administrative Measures on the Control of Pollution Caused by Electronic Information Products (EIP) # 39, also known as China RoHS, the following information is provided regarding the names and concentration levels of Toxic Substances (TS) or Hazardous Substances (HS) which may be contained in Alacritech Inc. products relative to the EIP standards set by China's Ministry of Information Industry (MII).

Name of the Component	Hazardous/Toxic Substance/Elements					
	Lead (PB)	Mercury (Hg)	Cadmium (CD)	Hexavalent Chromium (CR6+)	Polybrominated Biphenyl (PBB)	Polybrominated Diphenyl Ether (PBDE)
Printed Circuit Boards	X	O	O	O	O	O
Software / Documentation CDs	O	O	O	O	O	O
Mechanical brackets, Screws	O	O	O	O	O	O

X represents that the concentration of such hazardous/toxic substance in all the units of homogeneous material of such component is higher than the SJ/Txxx-2006 Requirements for Concentration Limits.

O represents that no such substances are used or that the concentration is within the aforementioned limits.

*Alacritech believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.*

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### C-ROHS 有害(HS)/有毒 (TS) 物質濃度圖表

#### 根據中國標準的有害 (HS)/有毒 (TS) 物質相關資訊

根據中國《電子資訊產品 (EIP) 污染控制管理辦法》第 39 號，（也稱為中國RoHS）的規定，以下提供了 Alacritech Inc. 產品中可能包含之有毒物質 (TS) 和有害物質 (HS) 的名稱和濃度等相關資訊，參照標準為中國資訊產業部 (MIIT) 規定的 EIP 標準。

成分名稱	有害/有毒物質/元素					
	鉛 (PB)	汞 (Hg)	鎘 (CD)	六價鉻(CR 6+)	多溴聯苯 (PBB)	多溴聯苯醚(PBDE)
印刷電路板	X	O	O	O	O	O
軟體/文件 CD	O	O	O	O	O	O
機械托架、螺釘	O	O	O	O	O	O

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## Appendix E 10 Gigabit Environmental Notices

### FCC COMPLIANCE STATEMENT

We, Alacritech Inc., at  
1995 N. 1<sup>st</sup> St  
San Jose, CA 95112  
(408) 287-9997

declare under our sole responsibility that the product(s):

SEN3001EF comply 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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Move the computer away from the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

The Interference Handbook

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402.  
Stock No. 004-000-00345-4.

NOTE: In order to maintain compliance with the limits of a Class B digital device, Alacritech requires that you use network cables of a specific quality when connecting this device.

Changes or modifications not expressly approved by Alacritech could void the user's authority to operate this equipment.

### VCCI Declaration of Conformity

The SEN3001EF is a Class B product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB 情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。  
取扱説明書に従って正しい取り扱いをして下さい。

### EN Declaration of Conformity

The SEN3001EF has been tested in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN55022 Class B (CISPR 22), EN55024, and EN60950.

### EU-RoHS Declaration of Conformity

Alacritech 3000 product family is compliant with the European Parliament RoHS Directive 2002/95/EC the Council of 27 January 2003 on the restriction of certain hazardous substances in electrical and electronic equipment. The following table is provided regarding the names and concentration levels of Hazardous Substances

Name of the Component	Hazardous/Toxic Substance/Elements					
	Lead (PB)	Mercury (Hg)	Cadmium (CD)	Hexavalent Chromium (CR6+)	Polybrominated Biphenyl (PBB)	Polybrominated Diphenyl Ether (PBDE)
Printed Circuit Boards	O	O	O	O	O	O
Software / Documentation CDs	O	O	O	O	O	O
Mechanical brackets, Screws	O	O	O	O	O	O

- X represents that the concentration of a hazardous substance within one or more homogeneous materials of such component exists and that the substance is allowed through one or more exemptions associated with Storage and Networking products as listed within the Annex.
- O represents that no such substances are used or that the concentration is within the limits of the directive.

*Alacritech believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.*

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### C-ROHS HS/TS Substance Concentration Chart

Information on HS/TS Substances according to Chinese Standards

In accordance with China's Administrative Measures on the Control of Pollution Caused by Electronic Information Products (EIP) # 39, also known as China RoHS, the following information is provided regarding the names and concentration levels of Toxic Substances (TS) or Hazardous Substances (HS) which may be contained in Alacritech Inc. products relative to the EIP standards set by China's Ministry of Information Industry (MII).

Name of the Component	Hazardous/Toxic Substance/Elements					
	Lead (PB)	Mercury (Hg)	Cadmium (CD)	Hexavalent Chromium (CR6+)	Polybrominated Biphenyl (PBB)	Polybrominated Diphenyl Ether (PBDE)
Printed Circuit Boards	X	O	O	O	O	O
Software / Documentation CDs	O	O	O	O	O	O
Mechanical brackets, Screws	O	O	O	O	O	O

X represents that the concentration of such hazardous/toxic substance in all the units of homogeneous material of such component is higher than the SJ/Txxx-2006 Requirements for Concentration Limits.

O represents that no such substances are used or that the concentration is within the aforementioned limits.

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## C-ROHS 有害(HS)/有毒 (TS) 物質濃度圖表

### 根據中國標準的有害 (HS)/有毒 (TS) 物質相關資訊

根據中國《電子資訊產品 (EIP) 污染控制管理辦法》第 39 號，（也稱為中國RoHS）的規定，以下提供了 Alacritech Inc. 產品中可能包含之有毒物質 (TS) 和有害物質 (HS) 的名稱和濃度等相關資訊，參照標準為中國資訊產業部 (MII) 規定的 EIP 標準。

成分名稱	有害/有毒物質/元素					
	鉛 (PB)	汞 (Hg)	鎘 (CD)	六價鉻(CR 6+)	多溴聯苯 (PBB)	多溴聯苯醚(PB DE)
印刷電路板	X	O	O	O	O	O
軟體/文件 CD	O	O	O	O	O	O
機械托架、螺釘	O	O	O	O	O	O

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