Solarflare SFN8722 network adapter Quick Start Guide

XtremeScale™ Dual-Port 10GbE SFP+ OCP Server I/O Adapter
Part numbers: SFN8722

Information in this document is subject to change without notice.

UNLESS THERE IS A SAFETY CONCEPT OR REDUNDANCY FEATURE CONSISTENT WITH THE ISO 26262 AUTOMOTIVE SAFETY STANDARD (“SAFETY DESIGN”). CUSTOMER SHALL, PRIOR TO USING OR DISTRIBUTING ANY SYSTEMS THAT INCORPORATE PRODUCTS, THOROUGHLY TEST SUCH SYSTEMS FOR SAFETY PURPOSES. USE OF PRODUCTS IN A SAFETY APPLICATION WITHOUT A SAFETY DESIGN IS FULLY AT THE RISK OF CUSTOMER, SUBJECT ONLY TO APPLICABLE LAWS AND REGULATIONS GOVERNING LIMITATIONS ON PRODUCT LIABILITY.

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1.1 Overview

The Solarflare XtremeScale™ SFN8722 is a dual-port SFP+ server I/O adapter combining precision time synchronization, hardware timestamping with ultra-low latency 10G/1G Ethernet. XtremeScale™ adapters with AppFlex™ technology provide a flexible platform to deliver specific on-board services with a single server adapter.

User Guide

For comprehensive installation instructions, configuration and tuning guidance, and AppFlex information please consult the *Solarflare Server Adapter User Guide*.

The Solarflare User Guide can be downloaded from https://support.solarflare.com

Drivers

Solarflare server adapters support the following OS distributions; Linux RHEL6, 7 and MRG, SLES11, 12 and SLERT, Ubuntu 14.04, 14.10 and 15.04, Debian 7.0 and 8.0, Linux KVM, VMware ESXi 5.5 and 6.x, Windows Server 2008 R2 and later versions.

Drivers can be downloaded from https://support.solarflare.com

Onload

Solarflare server adapters also support Onload – a 'kernel bypass' accelerated user-level TCP/IP network stack, providing extremely low latency. Onload links with the application using the standard POSIX BSD sockets API, meaning no modifications are required to the application being accelerated. Onload is enabled via AppFlex technology activation.

To learn more about Onload please visit http://www.openonload.org

Precision Time Protocol

XtremeScale™ adapters are equipped with a Stratum 3 oscillator to support hardware timestamping of PTP packets and server synchronization. Solarflare's Enhanced PTP is enabled via AppFlex technology activation, and can synchronize multiple adapters to a PTP source.

Solarflare's Enhanced PTP daemon is available from https://support.solarflare.com

Solarflare adapters covered by this guide

Adapters covered by this guide include pre-installed activation keys:

Part number	Activation keys included	Regulatory product code
SFN8722	—	SR211

Solarflare AppFlex technology activation enables specific adapter features. Additional activation keys can be installed on existing adapters to enhance their capabilities.

This enables creating a server platform that is optimized for a range of application environments including cloud, web server deployment, virtualization, network acceleration, hardware precision timestamping, line-rate packet capture, and server level protection against DOS/DDOS threats.

To learn more about AppFlex technology activation, visit http://www.solarflare.com/my-appflex

Support

If you have any questions on your Solarflare products please contact your sales representative or contact Solarflare.

For support on Solarflare products please email support@solarflare.com

Limited warranty

Before using any of the Products, Purchaser shall determine the suitability of the Products for Purchaser's intended use by considering such factors as overall product design and the processing and environmental conditions to which the Products will be subjected. Solarflare warrants solely to Purchaser, for a period of 3 years from the date a Product is delivered to Purchaser (the "Warranty Period"), that the Product will conform in all material respects to Solarflare's published specifications for such Product in effect as of the date of purchase (the "Limited Warranty").

To view the whole warranty, visit http://www.solarflare.com/Media/Default/PDFs/Support/Solarflare_3yrWarranty_ServerAdapters.pdf

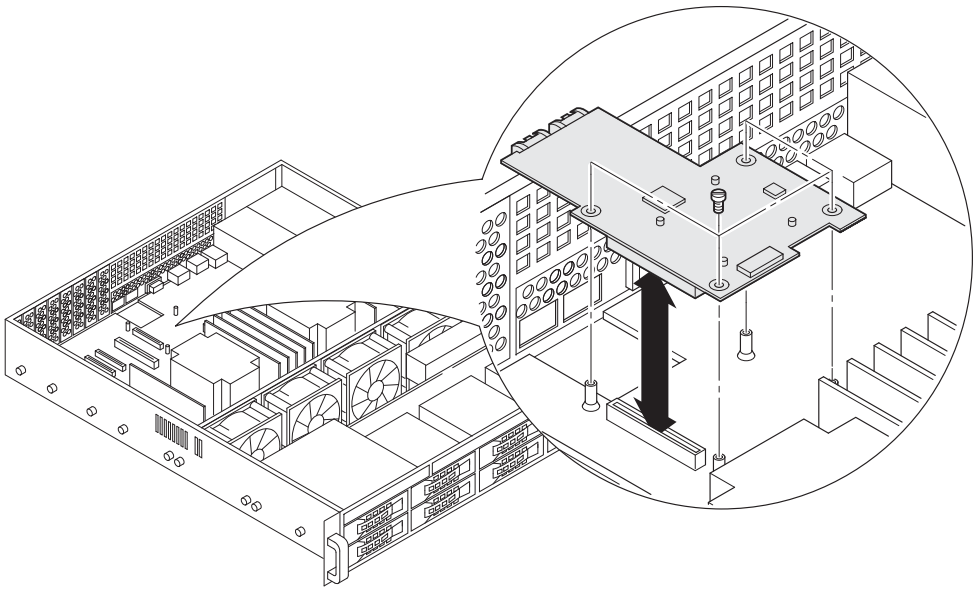
1.2 Installing the adapter

The SFN8722 SFP+ dual-port adapter is a Type 1 OCP adapter. It complies with the *OCP Mezzanine card 2.0 Design Specification*, using the form factor from the v0.5 standard with 8mm stacking. It is compatible with Intel OCP servers.

CAUTION: Servers contain high voltage electrical components. Before removing the server cover, disconnect the mains power supply to avoid the risk of electrocution. Before handling computer components, discharge static electricity from yourself by touching a metal surface, or wear a correctly fitted anti-static wrist band.

Inserting the adapter in the mezzanine slot

Shut down the server and unplug it from its power source. Remove the server cover to access the mezzanine slot in the server. Locate the mezzanine slot and its associated port holes (refer to the server manual if necessary). Insert the SFP+ cages of the Solarflare server adapter through the port holes, then seat the adapter in the mezzanine slot. Secure the adapter to the standoffs.



CAUTION: The SFN8722 adapter must have sufficient air flow cooling. **Server cooling fans must be fully operative to prevent damage to the adapter.**

Cables and transceivers

Solarflare SFP+ server adapters support a wide range of SFP+ direct attach cables, 10G BASE-SR optical transceiver modules, 1Gb optical transceivers and 1000BASE-T transceivers.

For a full list of supported cables and transceivers visit http://www.solarflare.com/Transceivers-and-Cables

1.3 PXE booting

All Solarflare adapters comply with PXE 2.1, and support PXE booting.

This adapter is shipped with PXE booting enabled, and boot ROM support ‘exposed’. The Boot ROM Agent runs during the machine bootup stage, allowing the user to enter the setup screens (via Ctrl+B) and enable or disable PXE support as required. The Boot ROM Agent can also be invoked using the Solarflare supplied `sfboot` utility. For detailed instructions, refer to the *Solarflare Server Adapter User Guide*.

1.4 Warnings

Changes or modifications not expressly approved by Solarflare Communications Inc., the party responsible for FCC compliance, could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Underwriters Laboratory Inc ('UL') has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested for fire, shock or casualty hazards as outlined in the UL's Standard for Safety UL 60950-1. **UL Certification does not cover the performance or reliability of the security or signaling aspects of this product. UL makes no representations, warranties or certifications whatsoever regarding the performance or reliability of any security or signaling related functions of this product.**

The laser safety of this product has been verified using the following certified laser device module (LDM). Refer to the manufacturer documentation for test certification details:

Manufacturer	Model
Finisar Corporation	FTLX8574D3BCL-SL
Lumentum Operations	PLRXPL-SC-S43-SF

When installed in a 10Gb Ethernet network interface card from the Solarflare SFN8000 series, the laser emission levels remain under Class I limits as specified in the FDA regulations for lasers, 21 CFR Part 1040.

The decision on what LDMs to use is made by the installer. For example, equipment may use one of a multiple of different LDMs depending on path length of the laser communication signal. This equipment is not basic consumer ITE.

This equipment is installed and maintained by qualified staff from the end user communications company or subcontractor of the end user organization. The end product user and/or installer are solely responsible for ensuring that the correct devices are utilized in the equipment and the equipment with LDMs installed complies with applicable laser safety requirements.

Do not install this product in hazardous areas where highly combustible or explosive products are stored or used without taking additional safety precautions. Do not expose this product to rain or moisture. This Class III SELV product is intended only to be powered by a certified limited power source.

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.

NOTE: 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 instructions, 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.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

A 급 기기 (업무용 방송통신기기): 이 기기는 업무용 (A 급) 으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 , 가정외의 지역에서 사용하는 것을 목적으로 합니다 .

产品中有害物质的名称及含量						
部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PB#B)	多溴二苯醚 (PBDE)
RC0402FR series resistor	x	o	o	o	o	o
ERJ-2GE series resistor	x	o	o	o	o	o
CRCW0402 series resistor	x	o	o	o	o	o
NC7NZ34K8X	x	o	o	o	o	o

本表格依据 SJ/T 11364 的规定编制。
o：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。
x：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

設備名稱：10Gb Dual Port Ethernet Network Interface Card，型號（型式）：SR211						
單元	限用物質及其化學符號					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr+6)	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
RC0402FR 系列電阻	超出 0.1 wt %	o	o	o	o	o
ERJ-2GE 系列電阻	超出 0.1 wt %	o	o	o	o	o
CRCW0402 系列電阻	超出 0.1 wt %	o	o	o	o	o
NC7NZ34K8X	超出 0.1 wt %	o	o	o	o	o

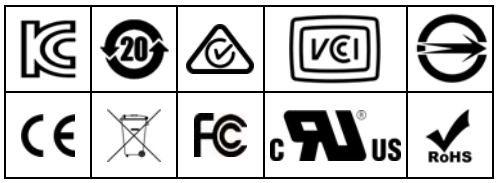
備考 1. “ 超出 0.1 wt %” 及 “ 超出 0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。
備考 2. “o” 係指該項限用物質之百分比含量未超出百分比含量基準值。
備考 3. “–” 係指該項限用物質為排除項目。

1.5 Regulatory approval

This adapter has the following regulatory approval:

Category	Specification	Details
EMC	Europe	BS EN 55022:2010, 55032:2012
		BS EN 55024:2010
	US	FCC CFR 47 Part 15 Class A
	Canada	ICES 003/NMB-003 Class A
	Taiwan	CNS 13438:2006 Class A
	Japan	VCCI Regulations V-3:2014.04 Class A
	South Korea	KCC KN-32, KN-35
	Australia	AS/NZS CISPR 22:2009 +A1:2010
Safety[1]	Europe	BS EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011 +A2:2013
	US	UL 60950-1 2nd Ed.
	Canada	CSA C22.2 60950-1-07 2nd Ed.
	CB	IEC 60950-1:2005 2nd Ed.+AMI:2009 +AM2:2013
RoHS	Europe	Complies with EU directive 2011/65/EU

1. The safety assessment has been concluded on this product as a component /sub-assembly only.



1.6 Solarflare Boot Manager

The Solarflare Boot Manager is installed in the adapter's flash memory. This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details. Either the latest or an earlier version of the source code for the Solarflare Boot Manager can be requested by sending an e-mail to support@solarflare.com.