Product Brief

Professional suppier of NIC

LR-LINK LREC9814AF-4SFP+

PCI Express v3.0 x8 Quad Port SFP+ 10 Gigabit Server Adapter (Braodcom BCM57840 Based)

LR-LINK®
Link your world to everywhere

Overview:

LREC9814AF-4SFP+ is a PCI Express 3.0 x8 10Gbps Quad SFP+ Port Ethernet Fiber Server Adapter based on Broadcom BCM57840 chipset, independently developed by Shenzhen Lianrui Electronics CO.,LTD and compatible with x16 lanes. The server adapter meets the needs of next-generation data centers by providing unparalleled features for server and network virtualization. The server adapter has a flexible 4-port 10GbE link rate on a PCI Express v3.0 x8 slot for use in environments where multiple network needs are deployed. This server adapter is mainly designed for servers and high-end devices, so that system I/O is no longer a bottleneck for high-end network applications. At the same time, the server adapter card can be bundled into multiple groups at the same time to achieve fault tolerance and redundancy to ensure network performance or extended network bandwidth, enables real-time detection and implementation of routing traffic from failed ports to other members of the same group to continue operation for uninterrupted high-performance communication. In addition to stateless offloading, the server adapter card can also be distributed to the CPU core on network traffic, improving network throughput; at the same time, LSO, GSO is offloaded from the host software, thereby reducing CPU overhead. Free up CPU resources to handle other applications.
The server adapter is the ideal solution for deploying multiple networks and deploying critical network applications and environments on high-performance servers.

The LRE9814AF-4SFP+ server adapter card is designed for superior performance in multiprocessor systems. It is applied to meet the needs of network traffic and data offloading, processing and virtualization and big data computing in the new and old server markets in the current and future. When used with Microsoft's Receive Side Extension or Extensible I/O in Linux, the card effectively balances the network load between multiple central processing units (CPUs).

The LRE9804BF-4SFP+ accommodates the ideal solution for multiple network segments in the current and future years, serving as a key high performance server high performance and network application environment.

A Complete, Unified Networking Solution

Converging data and storage onto one fabric eliminates the need for multiple adapters, cables and switches.
Furthermore 10 gigabit Ethernet provides the bandwidth to converge these multiple fabrics onto a single wire. A key capability that makes all this possible is traffic class separation provided by Data Center Bridging (DCB) –providing a one-wire solution with virtual pipes for the different classes of traffic:

- Data: Best effort delivery of standard LAN traffic
- Management: Guaranteed connectivity of data center IP management

Key Features

- Quad –Port 10GbE Server Adapter
- PCI Express* (PCIe) 3.0, x8
- Exceptional Low Power Adapters
- Network Virtualization offloads
- Intel® Ethernet Flow Director for hardware based application traffic steering
- Intel® Data Plane Developer Kit (DPDK) optimized for efficient packet processing
- Excellent small packet performance for network appliances and Network Function Virtualization (NFV)
- I/O virtualization innovations for maximum performance in a virtualized server
- TCP Offload Engine (TOE)
- IPv6 acceleration
- SR-IOV with up to 64 Virtual Functions (VFs) for Guest Operating Systems (GOS) per port Cables
- LC-LC fiber-optic cables (with required optional transceivers)

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Network Virtualization

Network virtualization is the next big trend in creating an agile data center. The LERC9814AF-4SFP+ adapter is ready
to help you take that next step.
▪ VXLAN, NVGRE, GENEVE Offloads:
These stateless offloads preserve application performance for overlay networks. With these offloads it is possible to distribute network traffic across CPU cores. At the same time BCM57840 offloads LSO, GSO, and checksum from the host software reducing CPU overhead.

Intelligent Offloads

The Intel Xeon processor family has demonstrated increased computing performance and increased integration of key server subsystems generation after generation. To offload is to leverage the ever-escalating computing power of the Xeon processor where appropriate and implementing complementary accelerations in the network controller—this is what Intel refers to as "intelligent offloads." By employing a balanced hybrid of compute and offload, intelligent offloads are able to achieve the optimized point of performance and efficiency. This is most notably observed in the following usage models:
▪ TCP Stateless Offloads:
Demonstrates leading performance vs. TOE solutions without restricting feature usage (TOE usage usually requires that key features be disabled). Supported stateless offloads include Checksum, TSO, VMDq, and RSS.
▪ Host iSCSI /FCoE Initiators:
Providing exceptional performance without the need for full-offload HBA2 methods.
▪ Flow Classification:
Trafficking data flows across multiple consumers and connections.

Manageability

LREC9814AF-4SFP+ also incorporate the manageability required by IT personnel for remote control and alerting. Communication to the Board Management Controller (BMC) is available either through an on-board SMBus port or the DMTF-defined NC-SI, providing a variety of management protocols, including IPMI, BMC Pass-thru, OS2BMC, and MCTP/SMBus and MCTP/PCIe.

FEATURES General

Broadcom BCM57840 10 Gigabit Ethernet Controller
SFP+ Connectivity
Low-profile
Full-height
Load balancing on multiple CPUs
iSCSI remote boot support
Fibre Channel over Ethernet (FCoE) support
Support for most network operating systems
RoHS-compliant
Intel® PROSet Utility for Windows*Device Manager
Time Sync (IEEE 1588*, 802.1as)

I/O Features for Multi-core Processor Servers

Intel® Flow Director
MSI-X support
Multiple Queues per port
Tx/Rx IP,SCTP,TCP,&UDP checksum offloading (IPv4, IPv6) capabilities

Virtualization Features

Next-Generation VMDq
Up to 256 maximum VMDq VMs supported
PCI-SIG SR-IOV Implementation (128 per device)
Virtual Machine Load Balancing(VLMB)
Advanced Packet Filtering
VLAN support with VLAN tag insertion, stripping and packet filtering for up to 4096 VLAN tags
VXLAN and NVGRE Support

Manageability Features

Preboote Xecution Environment (PXE) Support
Simple Network Management Protocol (SNMP) and Remote Network Monitoring (RMON) Statistic Counters
iSCSI Boot
Watchdog Timer

Adapter Product Features

Intel® PROSet Utility
Plug and play specification support
Receive Side Scaling

Advanced Software Feature

Adapter fault tolerance (AFT)
Switch fault tolerance (SFT)
Adaptive load balancing (ALB)
Teaming support
IEEE 802.3ad (link aggregation control protocol)
PCIe Hot Plug*/Active Periphera component interconnect (PCI)
IEEE 802.1Q* VLANs
IEEE 802.3 2005* flow control support
Tx/Rx IP, TCP, & UDP checksum offloading (IPv4, IPv6) capabilities (Transmission control protocol(TCP), user datagram protocol
(UDP), Internet protocol (IP)
IEEE 802.1p*
TCP segmentation large send offload
MSI-X supports Multiple Independent Queues
Interrupt moderation
Ipv6 offloading – Checksum and segmentation capability extended to new standard packet type

Network Operating Systems (NOS) Software Support

Windows 7 x64
Windows 8/8.1
Windows 10
Windows Server 2008 /2008 R2
Windows Server 2012 /2012 R2
Windows Server 2016 /2016 R2
SCO Open Server 6 and UnixWare 7.1.x or later
LINUX kernel version 2.6.x,3.x,4.x or later
LINUX centos 6.x,7.x or later
FreeBSD 7.x or later
SCO Unix 5.x or later
Vmware ESX/ESXi 4.x/5.x/6.x or later

General	
Connections	Quad SFP+ cages for: ▪ SFP+ SR fiber-optic transceivers ▪ SFP+ LR fiber-optic transceivers ▪ SFP+ Direct Attach cables
Network Standard	IEEE 802.3
Physical Layer Interface	10GBASE-SR (LRXP8510-X3ATL) 10GBASE-LR (LRXP1310-10ATL) SFF-8431: 10GSFP+ DAC (Direct Attach Copper)
Technical Features	
Data rate supported per port	▪ Optical: 1 GbE/10 GbE ▪ Direct Attach: 10 GbE
Bus type	PCI Express 3.0 (8 GT/s)
Bus Width	PCI Express x8
Interrupt levels	INTA, MSI, MSI-X
Hardware certifications	FCC, CE, RoHS
Controller-processor	Broadcom BCM57840
Power Consumption	
Quad-port 10GBASE-SR/LR (max)	10.2W
Air Flow	Minimum of 1 50 LFM required
Operating temperature	0 °C to 55 °C (32 °F to 131 °F)
Storage temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Storage humidity	Maximum: 5% to 90% non-condensing relative humidity at 35 °C
LED Indicators	LINK (solid) and ACTIVITY (blinking)
	LINK SPEED (green=10 Gbps; yellow=1 Gbps)

Ordering Information

M/N	Description
LREC9814AF-4SFP+	PCIe x8 Quad Port SFP+ 10 Gigabit Server Adapter (Broadcom BCM57840 Based)
LRXP8510-X3ATL(optional)	SFP+ Duplex 10Gbps 3.3V Multi-Mode Transceiver ,850nm 0.3km
LRXP1310-10ATL(optional)	SFP+ Duplex 10Gbps 3.3V Single-Mode Transceiver, 1310nm , 10km
SFP+-10G-CU1M (optional)	SFF-8431 10G SFP+ DAC (Direct Attach Copper) 1M
SFP+-10G-CU3M (optional)	SFF-8431 10G SFP+ DAC (Direct Attach Copper) 3M
SFP+-10G-CU5M (optional)	SFF-8431 10G SFP+ DAC (Direct Attach Copper) 5M

PS: Above details are only for reference, if there are any changes, no inform will have.

COMPANION PRODUCTS

Fiber NIC

- LR-LINK PCI 100FX Desktop Adapter
- LR-LINK PCIe 100FX Desktop Adapter
- LR-LINK PCI 1000BASE-SX/LX Desktop Adapte
- LR-LINK PCIe 1000BASE-SX/LX Desktop Adapter
- LR-LINK PCIe 1000BASE-SX/LX Server Adapter
- LR-LINK PCIe 10GBASE-SR/LR Server Adapter
- LR-LINK PCIe 25GBASE-SR/LR Server Adapter
- LR-LINK PCIe 40GBASE-SR/LR Server Adapter

Copper NIC

- LR-LINK PCI 10/100Mbps Desktop Adapter
- LR-LINK PCIe 10/100Mbps Desktop Adapter
- LR-LINK PCI 10/100/1000Mbps Desktop Adapter
- LR-LINK PCIe 10/100/1000Mbps Desktop Adapter
- LR-LINK PCIe 10/100/1000Mbps Server Adapter
- LR-LINK PCIe 100/1Gbps/10Gbps Server Adapter

DOWNLOAD DRIVERS

To get the drivers, please visit us at http://www.lr-link.com/support/driver.html

PRODUCT QUICK GUIDE

To know the network card basic knowledge to choose the suitable NIC you need, please visit us at:http://www.lr-l ink.com/product.html

CUSTOMER SUPPORT

LR-LINK customer Support Services offers a broad selection of programs including phone support and warranty service. For more information, contact us at Service and availability.http://www.lr-link.com/contactus.html

LianRui Electronic Co.LTD
A professional supplier of high-quality NIC:PCI,PCI-X,PCI-Express;SC,ST,LC,SFP,SFP+,QSFP+;100M,1G,10G,25G,40G;single,dual,quad ports. all series fiber and copper NIC with nearly 150 specifications which can meet demands of various applications, continuously creates value for customers and partners as well as OEM/ODM services provided.

DECLARATION

Shenzhen Lianrui Electronics Co., Ltd is an efficient Ethernet adapter design company with independent research and development, using Intel,Broadcom, Mellanox, Marvell, VIA, Realtek and other manufacturers Ethernet controller, developed by our company's independent R & D design team,manufacturedby our company workshop, and then sell.

Our products specifications come from modifying the chip manufacturer's specifications released. Product features, technical parameters, technology right, intellectualproperty rights and brand names etc.mentioned in specifications are just referenced only. There is no infringement meaning.If there is any important andsensitive content related, please contact our Lianrui company, we'll delete them, thank you.

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