

## LRES1016PF-SFP+

— PCIe x4 Single-port 10G SFP+ Ethernet Network Adapter (Intel 82599 Based)

### Overview



LRES1016PF-SFP+ is a PCIe x4 single-port fiber optic 10G Ethernet network adapter developed by Linkreal CO.,LTD. based on Intel 82599 master solution. The adapter has the ability to manage the Ethernet MAC and PHY layers in addition to the traffic management of the passed packets. The controller can share tasks such as TCP/UDP/IP checksums, offloads, compute tasks and TCP segmentation for server hosts through hardware acceleration.

The LRES1016PF-SFP+ provides hardware enhancements such as smart queuing optimized for multi-core processors and on-chip support for load balancing, enabling higher levels of 10 Gigabit Ethernet scalability. Provides Intel Virtualization Technology (VT-c), including at the network level, to significantly improve overall system performance in virtual server environments. Intel VT-c technology includes hardware optimization features that significantly reduce I/O bottlenecks, improve throughput and reduce latency. Intel VT-c's component, Virtual Machine Device Queuing (VMDq), significantly improves performance and reduces CPU utilization by offloading data-sorting loads from the virtual machine monitor (VMM) to the network controller. Enhanced features include offloading inter-VM switching within the server, virtual machine direct connectivity (VMDc) to VMs.

The PCIe x4 interface design of the LRES1016PF-SFP+ provides several hardware-optimized features including I/O virtualization and support for unified networking to transform the data center with outstanding reliability, scalability and mobility.

The network adapter also supports iSCSI, FCoE, PXE and more to boot. This feature allows SAN and LAN traffic to share existing Ethernet infrastructure without the need for a dedicated iSCSI adapter. the LRES1016PF-SFP+ includes advanced features that greatly increase the speed of iSCSI traffic and support iSCSI remote boot.

## Key Features

1. PCIe x4 single-port optical fiber 10G Ethernet network adapter;
2. Support TCP/UDP/IP verification, offload, calculation tasks and TCP segmentation, etc.;
3. PCIe 2.0(5.0GT/S) X4, compatible with x8, x16;
4. It support iSCSI, FCoE, PXE and other boot.

## Specifications

|                    |                                                        |
|--------------------|--------------------------------------------------------|
| Controller         | Intel 82599                                            |
| Cable medium       | Fiber Optics                                           |
| Cable Type         | 10GBase-SR、10GBase-LR、10GBase-Cu                       |
| Bracket Height     | Low Profile & Full Height                              |
| Power (max)        | 4.80 W                                                 |
| System Support     | Windows 7、8/8.1、10、11                                  |
|                    | Windows Server 2003 / R2                               |
|                    | Windows Server 2008 / R2                               |
|                    | Windows Server 2012 / R2                               |
|                    | Windows Server 2016 / R2                               |
|                    | Windows Server 2019 / R2                               |
|                    | Windows Server 2022 / R2                               |
|                    | Linux Stable Kernel version 2.6.x / 3.x / 4.x or later |
|                    | CentOS / RHEL 6.x / 7.x or later                       |
|                    | Ubuntu14.x/16.x or later                               |
|                    | FreeBSD 9 / 10 / 11 or later                           |
|                    | UOS V20 or later                                       |
|                    | VMware ESX/ESXi 5.x / 6.x or later                     |
| Bus Interface      | PCIe v2.0 (5.0GT/s) x4; compatible x8 x16              |
| Data rate per port | 10Gbps                                                 |
| Connector          | 1*10G SFP+                                             |
| Power Supply       | PCIe                                                   |

## Technical Features

|                           |                                                                                        |
|---------------------------|----------------------------------------------------------------------------------------|
| Ethernet Power Management | Yes                                                                                    |
| Protocol Support          | IEEE802.3ae 10 Gigabit Ethernet over fiber<br>IEEE 802.3x Full Duplex and flow control |

|                             |                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|
|                             | IEEE 802.1AS<br>IEEE 802.1Q VLAN<br>IEEE 802.3AD<br>IEEE 1588<br>IEEE 802.3az - Energy Efficient Ethernet (EEE) |
| PXE                         | Yes                                                                                                             |
| iSCSI                       | Yes                                                                                                             |
| FCoE                        | Yes                                                                                                             |
| DPDK                        | Yes                                                                                                             |
| WoL                         | No                                                                                                              |
| VMDq                        | Yes                                                                                                             |
| TOE (TCP/IP Offload Engine) | Yes                                                                                                             |
| RSS                         | Yes                                                                                                             |
| Jumbo Frames                | Yes                                                                                                             |
| PCI-SIG*SR-IOV              | Yes                                                                                                             |
| UEFI                        | Yes                                                                                                             |

## Environment Features

|                       |                                                       |
|-----------------------|-------------------------------------------------------|
| Operating Temperature | 0℃ to 55℃ (32°F to 131°F)                             |
| Storage Temperature   | -40℃ to 70℃ (-40°F to 158°F)                          |
| Storage Humidity      | Maximum: 90% non-condensing relative humidity at 35 ℃ |
| Certification         | FCC, CE, RoHS                                         |

## Physical Features

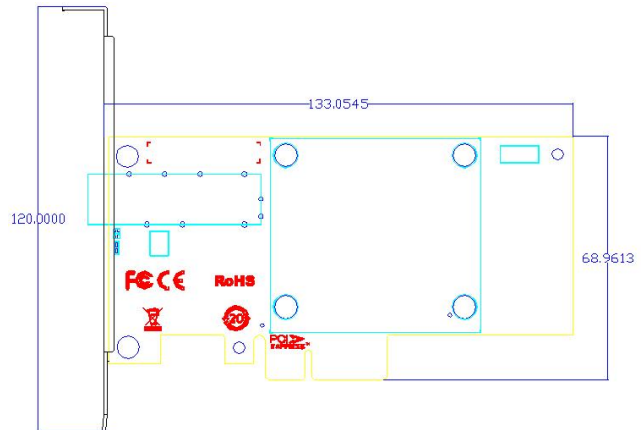
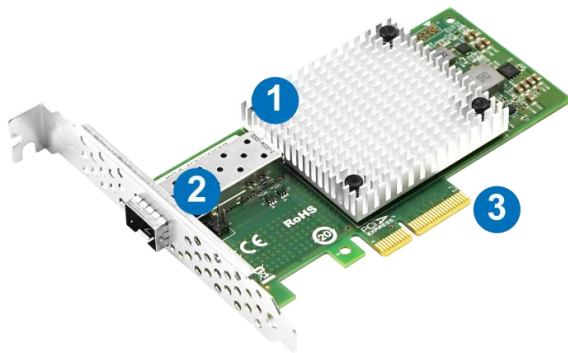
|                         |                       |
|-------------------------|-----------------------|
| PCB Size(L x W x H)     | 68.9 x 131.54 x 1.6mm |
| Package Size(L x W x H) | 222 x 147 x 28mm      |
| Weight(g)               | *                     |

## Order Information

| P/N             | Description                                                               |
|-----------------|---------------------------------------------------------------------------|
| LRES1016PF-SFP+ | PCIe x4 Single-port 10G SFP+ Ethernet Network Adapter (Intel 82599 Based) |

PS: Above details are only for reference, if there is any change, no prior notice.

## Product Structure



1. Heat sink
2. 1\*10G SFP+
3. Golden fingers

PS: The depictions provided of our products are not to scale and are intended for illustrative purposes only.

## Companion Products

### Fiber NIC

- § LR-LINK PCI 100FX Desktop Adapter
- § LR-LINK PCIe 100FX Desktop Adapter
- § LR-LINK PCI 1000BASE-SX/LX Desktop Adapter
- § LR-LINK PCIe 1000BASE-SX/LX Desktop Adapter
- § LR-LINK PCIe 1000BASE-SX/LX Server Adapter
- § LR-LINK PCIe 10GBASE-SX/LX Server Adapter
- § LR-LINK PCIe 25GBASE-SX/LX Server Adapter
- § LR-LINK PCIe 40GBASE-SX/LX Server Adapter
- § LR-LINK PCIe 100GBASE-SX/LX 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 100/1G/10Gbps Server Adapter
- § LR-LINK PCIe 1G/2.5G/5G/10Gbps Server Adapter

## Download Drivers

To get the drivers, please visit us at: <https://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:

<https://www.lr-link.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.

<https://www.lr-link.com/contactus.html>

## Linkreal Co.,LTD.

Linkreal Co.,Ltd is an efficient Ethernet adapter design company with independent research and development,using Intel, Net-swift, Tehuite, Broadcom, Realtek and other manufacturers Ethernet controller, developed by our company's independent R&D design team, manufactured by our company workshop, and then sell.

## Declaration

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

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The logo for LR-LINK, featuring the letters 'LR' in a large, bold, blue font, followed by '-LINK' in a smaller, bold, blue font.

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