

# **RP-1200ES+**

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PCI Express Bus 2-Port 10Gbase-SR/LR  
SFP+ Fiber NIC

Release 1.0

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## Revision History

| Release | Date       | Revision |
|---------|------------|----------|
| 1.00    | 12/06/2010 | A1       |

## **Caution**

Circuit devices are sensitive to static electricity, which can damage their delicate electronics. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electrical charge.

To protect your device, always:

- Touch the metal chassis of your computer to ground the static electrical charge before you pick up the NIC.
- Pick up the NIC by holding it on the left and right edges only.

## **Electronic Emission Notices**

### **Federal Communications Commission (FCC) Statement**

This equipment has been tested and found to comply with the FCC Part 15, Subpart B, Class B.  
CISPR 22:A1:2000+A2:2002;ICES-003:2004, Class B

### **European Community (CE) Electromagnetic Compatibility Directive**

This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN55022 and EN55024.

|     |                                  |
|-----|----------------------------------|
| EMI | EN55022:2006                     |
|     | EN61000-3-2:2000                 |
|     | EN61000-3-3:1995+A1/2001+A2/2005 |
|     | EN61000-6-3:2001                 |
| EMS | EN55024/1998+A1:2001+A2:2003     |
|     | →EN61000-4-2:2001                |
|     | →EN61000-4-3:2002+A1:2002        |
|     | →EN61000-4-4:2004                |
|     | →EN61000-4-5:2001                |
|     | →EN61000-4-6:2003                |
|     | →EN61000-4-11:2001               |

## **1. Introduction**

### **1-1. Overview**

RP-1200ES+ is a 10 Gigabit Ethernet Fiber SFP+ to PCIe x8 bus adapter that fully complies with IEEE 802.3ae 10GBase-SR and 10GBase-LR standards.

It provides up to 20Gbps full-duplex bandwidth capacity to support high-end servers. It is suitable for data center, enterprise, SMB and cloud computing applications.

### **1-2. Checklist**

Before you start installing the PCIe 10GBase-SR/LR Fiber Adapter, verify that the package contains the following items:

- RP-1200ES+ 10G NIC
- LAN Driver and this User's Manual CD-ROM

Please notify your sales representative immediately if any of the aforementioned items is missing or damaged.

## **2. Installation**

### **2-1. Installing a Network Fiber Adapter Card**

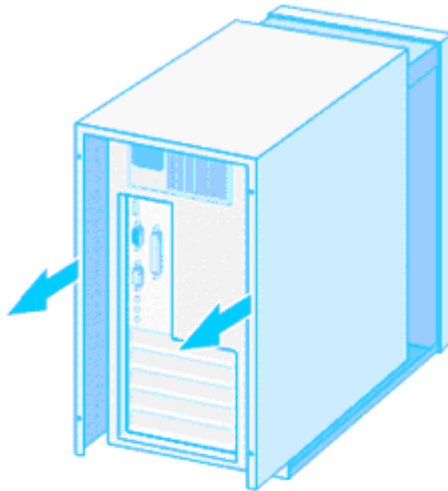
The following instructions apply to installing the RP-1200ES+ fiber adapter in most systems. Refer to the manuals that were supplied with your system for details about performing these tasks on your particular system.

To install the network adapter card, perform the following procedure:

| <b>Warning</b>  |
|---|
| <i>Before installing the adapter, ensure the system power is OFF and unplugged from the power outlet, and that proper electrical grounding procedures have been followed.</i> |

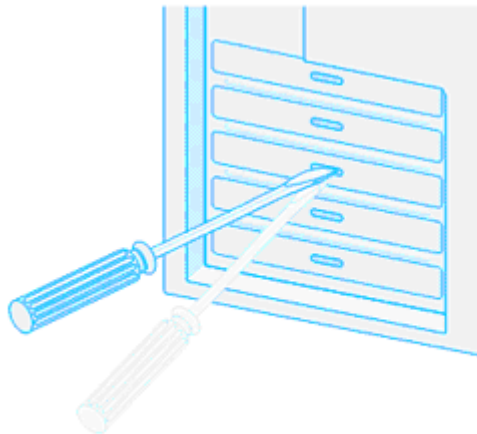
1. Make sure the power is off before removing the cover.
2. Remove the system cover and select any empty PCIe slot. See Figure 1.

If you do not know how to identify a PCIe slot, refer to your system documentation.



**Figure 1 Removing the PC Cover**

3. Select an empty, non-shared PCIe slot and remove the faceplate. Keep the faceplate in a safe place. You may need it for future use. See Figure 2.



**Figure 2 Removing the Faceplate From PCIe slot**

**Note**

*If you cannot locate or know how to find a PCIe slot, refer to the documentation that came with your system.*

4. Take the network fiber adapter card from the shipping package and store the packaging material in a safe location.

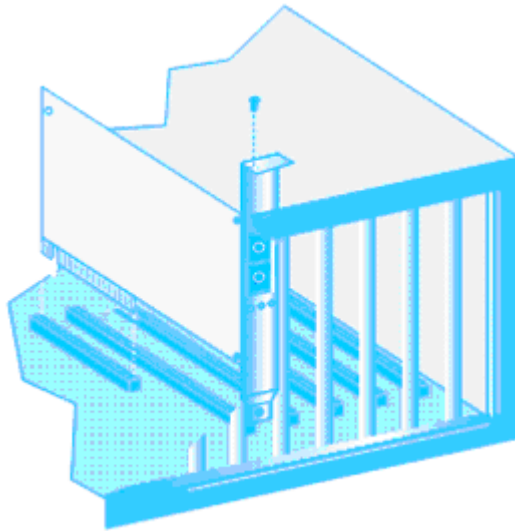
**Caution**

*Wear a grounding device and observe electrostatic discharge precautions when installing the network adapter card in a system period. Forget to observe this*

*caution could result in damage to the card.*

5. Applying even pressure at both corners of the card, push the adapter card until it is firmly seated in the PCIe slot.

Make sure the card is securely seated. See Figure 3.



**Figure 3**

6. Put the system's cover back and screw it with the screws removed in Step 2.
7. Connect the fiber optic cable.
8. Disconnect any personal antistatic devices.
9. Power the system on.

### 3. Model Description

| Model      | Description   |
|------------|---|
| RP-1200ES+ | PCI Express Bus 2-Port 10Gbase-SR/LR SFP+ Fiber NIC |

## 4. Remote Boot ROM & Configuration

### 4.1 Remote Boot ROM

This Fiber adapter card include gPXE ROM, external Boot ROM is not necessary.

### 4.2 Program/Erase ROM code

Plug RP-1200ES+ into PC

(A)Program: Run UPD.bat under DOS

(B)Erase: Run DisgPXE.bat under DOS

### 4.3 gPXE booting

#### **Server**

1. Install OS : XenServer 5.6.0 for example (RP-1200ES+ NIC built-in already)

Version : 1.4.2 (Sep 24 2009)

Description : Mellanox ConnectX HCA Ethernet driver

2. Install DHCP Server : dhcp-4.2.0.tar.gz for example

DHCP Server Config File

```
Subnet 192.168.5.0 netmask 255.255.255.0{  
    Range 192.168.5.100 192.168.5.150; #IP range for client  
    Next-server 192.168.5.10; #Tftp server IP address  
    Filename "pxelinux.0"; #First file from Tftp server  
    } #to client
```

3. Install TFTP Server : opentftpmntV1.63.tar.gz for example

TFTP Server Config File

[HOME]

```
/root/PXEServer #Add this line,TFTP home directory will be here  
#Relative files will be saved here
```

4. Disable firewall : iptables -F

5. Verify Driver Installed or not

```
lsmod | grep mlx_*
```

If succeeded, "mlx4\_en" and "mlx4\_core" will be shown.

#### **Client**

1. BIOS Configure : Boot Sequence → 1<sup>st</sup> Network Interface Card

2. Make sure that client is connected to the server.

3. If RP-1200ES+ is configured correctly, it will display the gPXE ROM code version (iPXE 1.0.0+) and start to link-up.



```
Mellanox ConnectX FlexBoot v3.2.100
iPXE 1.0.0+ -- Open Source Network Boot Firmware -- http://ipxe.org
net0: 00:1d:e1:1b:49:40 on PCI02:00.0 (open)
[Link:down, TX:0 TXE:0 RX:0 RXE:0]
[Link status: Unknown (0x1a086001)]
Waiting for link-up on net0... ok
DHCP (net0 00:1d:e1:1b:49:40).... ok
```

4. It will connect to the DHCP server to obtain a dynamic IP and the location of TFTP boot file to boot the image.

```
DHCP (net0 00:1d:e1:1b:49:40).... ok
net0: 192.168.5.140/255.255.255.0
Booting from filename "pxelinux.0"
tftp://192.168.5.10/pxelinux.0... ok
```

## 5. LED Indicator Description

| LED      | Color | Function   |
|----------|-------|--|
| LINK/ACT | Green | Lit when cable connection is good and speed is at 10Gbps.<br>Blinks when any traffic is present. |
| FDX      | Green | Lit when full-duplex mode is active.   |

## 6. Network Parameter

| <i>Multi-mode Fiber 62.5/125um, 50/125um</i> |                        |
|--|------------------------|
| Full Duplex                                  | 2000m                  |
| Half Duplex                                  | 412m                   |
| <i>Single-mode Fiber 9/125 um</i>            |                        |
| Full Duplex                                  | 1310nm 5, 20, 40, 60Km |

## 7. Technical Specifications

### Standards

- : IEEE 802.3ae 10Gbase-SR/LR
- IEEE 802.3x Full-Duplex Flow Control
- IEEE 802.1Q VLAN

**Fiber Optic Cable:**

- 62.5/125, 50/125 $\mu$ m multi-mode
- 9/125 $\mu$ m single-mode

**Data Transfer Mode/Speed:**

- Full duplex (Default)
- 10Gbps speed

**Diagnostics LED on Bracket:**

- LINK/ACT
- FDX

**OS support:**

Linux, VMware\_ESXi4.0, Windows 2003 Server, Windows 2008 Server, Windows 7, XenServer 5.6

|                            |  |
|----------------------------|--|
| <b>Bus Slot</b>            | : PCIe 2.0 Compliant                                   |
| <b>Power Requirement</b>   | : Max. 7.5W  |
| <b>Ambient Temperature</b> | : 0° to 50°C   |
| <b>Humidity</b>            | : 5% to 90%  |
| <b>Emission</b>            | : Complies with EMI Standard<br>FCC Class B<br>CE Mark |