

SUPERMICRO®



AOC-STG-I2

USER'S GUIDE

Rev. 1.0

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Notes

Introduction

Overview

This manual is written for system integrators, PC technicians and knowledgeable PC users who intend to integrate Supermicro's AOC-STG-I2 Add-on Card.

Product Features

The AOC-STG-I2 offers the following features:

- High-performing, PCI-E 10Gb Ethernet connection ideally suited for demanding enterprise applications.
- Dual-port Intel® 82598EB with two CX4 connectors.
- CX4-to-Optical module/cable (optional).
- PCI-E x8 to maximize performance (PCI-E Gen 2 compatible).
- Intel I/O Acceleration Technology (I/O AT) for improved CPU utilization.
- x16 Virtual Machine Device queues (VMDq) for virtualized environment.
- Direct Cache Access (DCA) to eliminate cache misses and reduce CPU load.
- Tx/Rx, IP, TCP, and UDP checksum offloading (IPv4, IPv6) capabilities to increase throughput and lower processor utilization
- Simple Network Management Protocol (SNMP) and Remote Network Monitoring (RMON) statistic counters.
- iSCSI boot.
- Preboot eXecution Environment (PXE) support.
- Energy-efficient design (maximum 6.5W).
- RoHS Compliant 6/6.

Supported Operating Systems

The AOC-STG-I2 supports the following Operating Systems (OS):

- Windows 2000/Windows XP/Windows 2003
- Linux
- VMWare ESX Server

Required Cables

The AOC-STG-I2 requires the following cables:

- CX4 copper-based cable. Maximum length 15 meters.
- InfiniBand 4x DDR cable (converts CX4 to optical). Maximum length 100 meters.

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Chapter 1

Safety Guidelines

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

1-1 ESD Safety Guidelines

Electric Static Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the add-on card by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

1-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer.
- Disconnect the power cable before installing or removing any cables from the system.
- Make sure that the add-on card is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

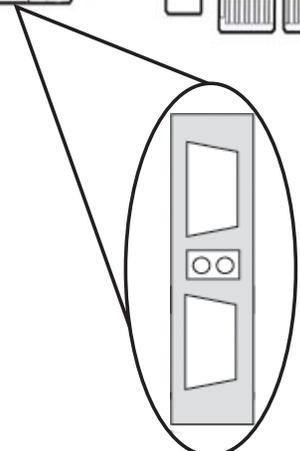
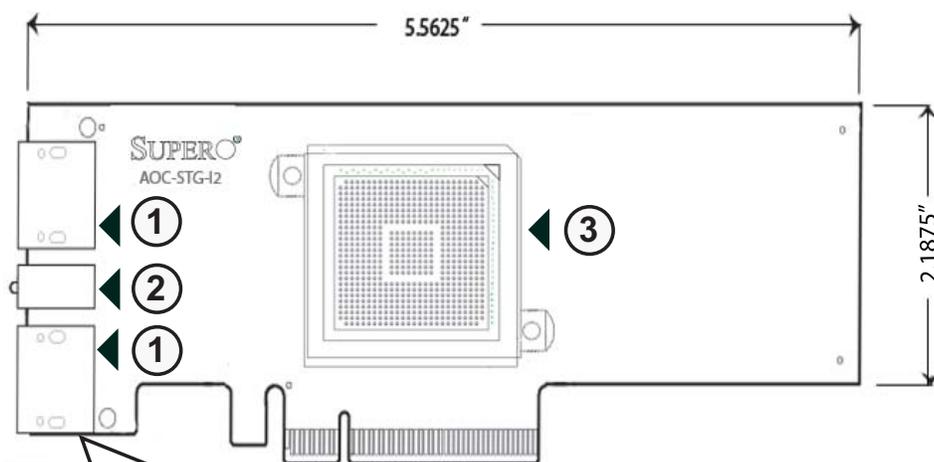
1-3 An Important Note to Users

- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

Chapter 2

Add-on Card Components

2-1 Front Connectors and LEDs



Components

- 1. LAN Connector Ports
- 2. LAN Port LEDs
- 3. Intel® 82598EB

2-2 Front Connector and LED Definitions

1. LAN ports

LAN ports allow the Add-on card to connect a maximum of two network cables (CX4 connectors). Each LAN port provides up to 10 gigabits per second connection speed and require CX4 copper-based cables for maximum throughput.

The ports are designated Port 1 and Port 2.

2. LAN Port LEDs

Each LAN port has a corresponding bi-level, dual-color LED which indicates connection, activity, and connection speed (in Giga-bits/second). Review the table below for LEDs definitions.

Color	Definition
Yellow	1Gb link speed
Blinking yellow	1Gb Activity
Green	10Gb link speed
Blinking Green	10Gb Activity

Chapter 3

Installation

3-1 Before Installation

Before installation, do the following

1. Power down the system.
2. Remove the power cord from the wall socket.
3. Use industry standard anti-static equipment (i.e. gloves or wrist strap) and/or an environment that prevents accidental electrostatic discharge.
4. Familiarize yourself with the server, motherboard, and/or chassis documentation.
5. Confirm that your Operating System includes the latest updates and hotfixes.

3-2 Hardware Installation

To install the add-on card, do the following:

1. Remove the server cover and, if necessary, set aside any screws for later use.
2. Remove the add-on card slot cover. If the case requires a screw, place the screw aside for later use.
3. Position the add-on card in the slot directly over the connector and gently push down on both sides of the card until it slides into the PCI connector.
4. Secure the add-on card to the chassis. If required, use the screw that you previously removed.
5. Attach any necessary internal and external cables to the add-on card (see page v for required cables).
6. Replace the chassis cover.
7. Plug the power cord into the wall socket and power up the system.

3-3 Windows 2003/XP/2000 Installation

Use the following instructions to install the drivers to a supported Windows Operating Systems. (For the latest systems, see page v.)

1. Run the Installation CD and when prompted click **Install Drivers and Software**.
2. Check **I accept the terms in the license agreement**.
3. Click **Next**.
4. Choose the appropriate Driver.
5. Click **Next**.
6. Click **Install**.

3-4 Linux Installation

To install the driver to a Linux system do the following:

Build a Binary RPM Package

1. Run `'rpmbuild -tb <filename.tar.gz>'`
2. Replace `<filename.tar.gz>` with the specific filename of the driver.

NOTE: For the build to work properly, the currently running kernel **MUST** match the version and configuration of the installed kernel sources. If you have just recompiled the kernel reboot the system now.

Manually Build the Driver

1. Move the base driver tar file to the directory of your choice. For example,

```
/home/username/ixgbe
```

or

```
/usr/local/src/ixgbe.
```

2. Untar/unzip archive:

```
tar xzf ixgbe-x.x.x.tar.gz
```

3. Change to the driver src directory:

```
cd ixgbe-x.x.x/src/
```

4. Compile the driver module:

```
make install
```

The binary will be installed as:

```
/lib/modules/[KERNEL_VERSION]/kernel/drivers/net/ixgbe/  
ixgbe.[k]o
```

The install locations listed above are the default locations. They might not be correct for certain Linux distributions. For more information, see the `ldistrib.txt` file included in the driver tar.

NOTE: `IXGBE_NO_LRO` is a compile time flag. The user can enable it at compile time to remove support for LRO from the driver. The flag is used by adding ``CFLAGS_EXTRA=-"DIXGBE_NO_LRO"'` to the make file when it's being compiled.

```
make CFLAGS_EXTRA="-DIXGBE_NO_LRO" install
```

5. Load the module:

For kernel 2.6.x, use the `modprobe` command:

```
modprobe ixgbe <parameter>=<value>
```

For 2.6 kernels, the `insmod` command can be used if the full path to the driver module is specified. For example:

```
insmod /lib/modules/<KERNEL VERSION>/kernel/drivers/net/ixg-  
be/ixgbe.ko
```

In addition when using 2.6 based kernels make sure that older ixgbe drivers are removed from the kernel, before loading the new module. To do this, use:

```
rmmod ixgbe; modprobe ixgbe
```

6. Assign an IP address to the interface by entering the following, where x is the interface number:

```
ifconfig ethx <IP_address> netmask <netmask>
```

7. Verify that the interface works. Enter the following, where <IP_address> is the IP address for another machine on the same subnet as the interface that is being tested:

```
ping <IP_address>
```