SUPERMICRO®

AOC-UTG-I2 Add-on Card

User's Manual

Revison 1.0b

The information in this User's Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our web site at www.supermicro.com.**

Super Micro Computer, Inc. ("Supermicro") reserves the right to make changes to the product described in this manual at any time and without notice. This product, including software, if any, and documentation may not, in whole or in part, be copied, photocopied, reproduced, translated or reduced to any medium or machine without prior written consent.

IN NO EVENT WILL SUPERMICRO BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, SPECULATIVE OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT OR DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR, SUPERMICRO SHALL NOT HAVE LIABILITY FOR ANY HARDWARE, SOFTWARE, OR DATA STORED OR USED WITH THE PRODUCT, INCLUDING THE COSTS OF REPAIRING, REPLACING, INTEGRATING, INSTALLING OR RECOVERING SUCH HARDWARE, SOFTWARE, OR DATA.

Any disputes arising between manufacturer and customer shall be governed by the laws of Santa Clara County in the State of California, USA. The State of California, County of Santa Clara shall be the exclusive venue for the resolution of any such disputes. Super Micro's total liability for all claims will not exceed the price paid for the hardware product.

FCC Statement: 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 manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate for further details.

WARNING: HANDLING OF LEAD SOLDER MATERIALS USED IN THIS PRODUCT MAY EXPOSE YOU TO LEAD, A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.

Manual Revison 1.0b

Release Date: October 15, 2009

Preface

Overview

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

Product Features

The AOC-UTG-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.
- Intel® PROSet Utility for teaming
- Preboot eXecution Environment (PXE) support.
- Energy-efficient design (maximum 6.5W).
- RoHS Compliant 6/6.

Supported Operating Systems

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

- Windows
- Linux
- VMWare ESX Server

Required Cables

The AOC-UTG-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.

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.

Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online at

http://www.supermicro.com/support/rma/

Whenever possible, repack the add-on card in the original Supermicro box, using the original packaging materials. If these are no longer available, be sure to pack the add-on card in an anti-static bag and inside the box. Make sure that there is enough packaging material surrounding the add-on card so that it does not become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products.

During the warranty period, contact your distributor first for any product problems.

Contacting SuperMicro

Headquarters

Address:	Super Micro Computer, Inc.
	980 Rock Ave.
	San Jose, CA 95131 U.S.A.
Tel:	+1 (408) 503-8000
Fax:	+1 (408) 503-8008
Email:	marketing@supermicro.com (General Information)
	support@supermicro.com (Technical Support)
Web Site:	www.supermicro.com

Europe

Address:	Super Micro Computer B.V.
	Het Sterrenbeeld 28, 5215 ML
	's-Hertogenbosch, The Netherlands
Tel:	+31 (0) 73-6400390
Fax:	+31 (0) 73-6416525
Email:	sales@supermicro.nl (General Information)
	support@supermicro.nl (Technical Support)
	rma@supermicro.nl (Customer Support)

9

Asia-Pacific

Address:	Super Micro Computer, Inc.
	4F, No. 232-1, Liancheng Rd.
	Chung-Ho 235, Taipei County
	Taiwan, R.O.C.
Tel:	+886-(2) 8226-3990
Fax:	+886-(2) 8226-3991
Web Site:	www.supermicro.com.tw
Technical Support:	
Email:	support@supermicro.com.tw
Tel:	+886-2-8228-1366, ext. 132 or 139

Notes

Table of Contents

Notes

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

Electrostatic 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.

Notes

Chapter 2
Connectors and Indicators

2-1   Front Connectors and Indicators

Connectors and indicators are used to attach the add-on card to the system's mainboard.

Figure 2-1. AOC-UTG-I2 Add-on Card Front Connectors and Indicators
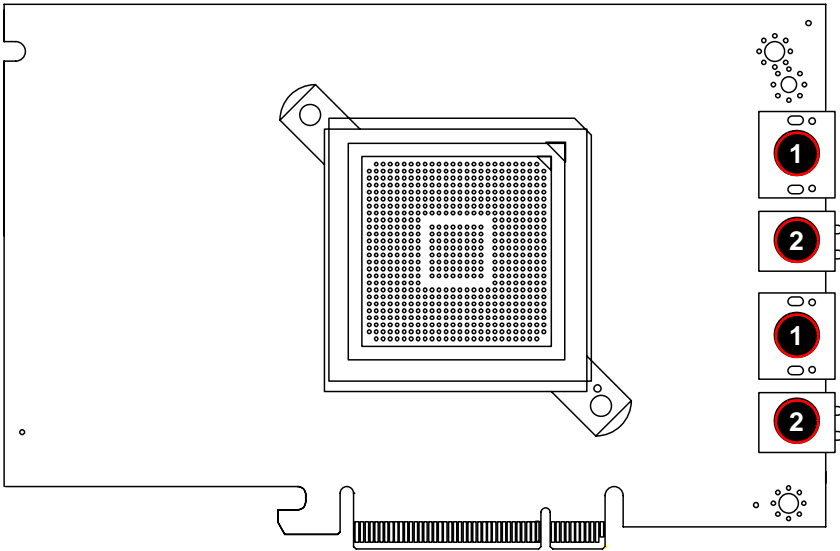

Table 2-1 lists the add-on card's front connectors and indicators.

Table 2-1. Front Connectors and Indicators

Number	Description
1	LAN Connector Ports
2	LAN Port LEDs

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.

LAN Port LEDs

Each LAN port includes four LEDs. The LEDs indicate connection, activity, and connection speed (in Gigabits/second).
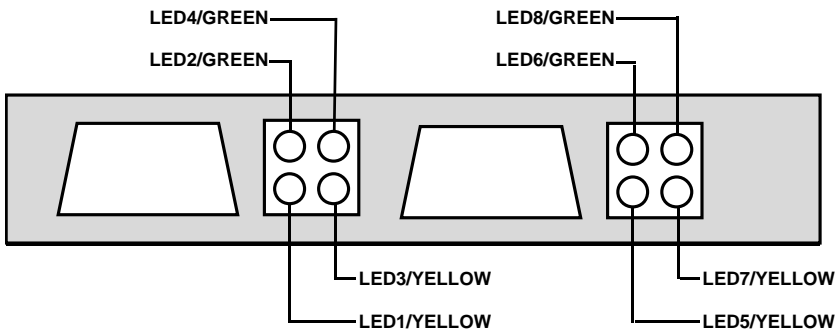
2-2   LED Indicators

Figure 2-2. LED Indicators

Figure 2-2 displays LED indicators on the AOC-UTG-I2 add-on card. These LEDs are described below in Table 2-2.

Table 2-2. LAN Port LEDs

LED Number	Color	Definition
LED1	Yellow	Link Speed 1-Gb/second
LED2	Green	Link Speed 10-Gb/second
LED3	Yellow	Optical Cable Connected
LED4	Green	LAN Activity
LED5	Yellow	Link Speed 1-Gb/second
LED6	Green	Link Speed 10-Gb/second
LED7	Yellow	Optical Cable Connected
LED8	Green	LAN 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 (such as 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 2003/2000 Installation

Use the following instructions to install the drivers to a supported Windows Operating Systems. The controller comes with a driver on the CD-ROM CDR-NIC.

1. Run the CDR-NIC.

    If you do not have a product CD-ROM, then download drivers from the Supermicro Support Website and transfer them to your system.

2. The SUPERMICRO window appears.

    Click on the computer icon next to the product model.

> **NOTE:** If the FOUND NEW HARDWARE WIZARD screen is displayed on your system, click CANCEL.

3. Click on INSTALL DRIVERS AND SOFTWARE.

4. Follow the prompts to complete the installation.

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 zxf 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/
    ixgbe/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>
    ```

Notes

Disclaimer

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices or other critical systems whose failure to perform be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.

Notes