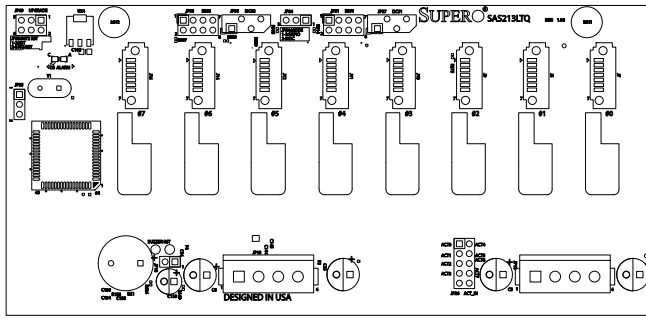
SUPERO®



SAS-213LTQ BACKPLANE

USER'S GUIDE

Rev. 1.0

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.

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"

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 Revision 1.0
Release Date: September 8, 2009

Table of Contents

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)

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:	886-2-8226-1900

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

Whenever possible, repack the backplane in the original Supermicro box, using the original packaging materials. If these are no longer available, be sure to pack the backplane in an anti-static bag and inside the box. Make sure that there is enough packaging material surrounding the backplane 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.

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 backplane 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, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

1-3 A 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.

1-4 Introduction to the SAS-213LTQ Backplane

The SAS-213LTQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS-213LTQ board revision 1.00, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

Chapter 2

Jumper Settings, Connectors and Pin Definitions

2-1 Front Connectors

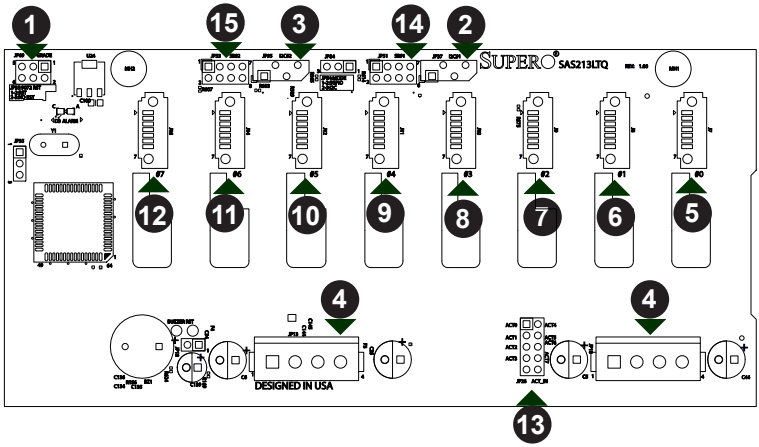


Figure 2-1: Front Connectors

Front Connectors

1. Upgrade Connectors: JP69
2. I²C Connector #1: JP37
3. I²C Connector #2: JP95
4. Power Connectors (4-pin): JP10 and JP13
5. SAS/SATA #0: J7
6. SAS/SATA #1: J8
7. SAS/SATA #2: J9
8. SAS/SATA #3: J10
9. SAS/SATA #4: J11
10. SAS/SATA #5: J12
11. SAS/SATA #6: J14
12. SAS/SATA #7: J16
13. ACT_IN: JP26
14. Sideband #1: JP51
15. Sideband #2: JP53

2-2 Front Connector and Pin Definitions

1. Upgrade Connectors

The upgrade connector is designated JP69 and is used for manufacturer's diagnostic purposes only.

2. - 3. I²C Connectors

The I²C Connectors, designated JP37 andJP95, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I²C Connector Pin Definitions

Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

4. Backplane Main Power Connectors

The 4-pin connectors, designated JP10, and JP13, provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector

Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

5. - 12. SAS/SATA Ports The SAS/SATA ports are used to connect the SAS drive cables. The eight SAS IN ports are designated #0 - #7.

13. ACT_IN:

The activity LED connector designated JP26, is used to indicate the activity status of each SAS drive. The activity LED connector is located on the front panel. For the activity LED connector to work properly, connect using a 10-pin LED cable. This is only used when the activity LED is not supported by the hard drive.

SAS Activity LED Header Pin Definitions

Pin#	Definition	Pin#	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	X	Empty

14. - 15. Sideband #1 and #2:

The sideband headers are designated JP51 and JP53. For SES-2 to work properly, an 8-pin sideband cable must be connected. See the table on the right for pin definitions.

Sideband Headers

Pin #	Definition	Pin #	Definition
2	Backplane Addressing (SB5)	1	Controller ID (SB6)
4	Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SDA (SB1)
8	Backplane ID (SB7)	7	SCL (SB0)
10	No Connection	9	No Connection

2-3 Front Jumper Locations and Pin Definitions

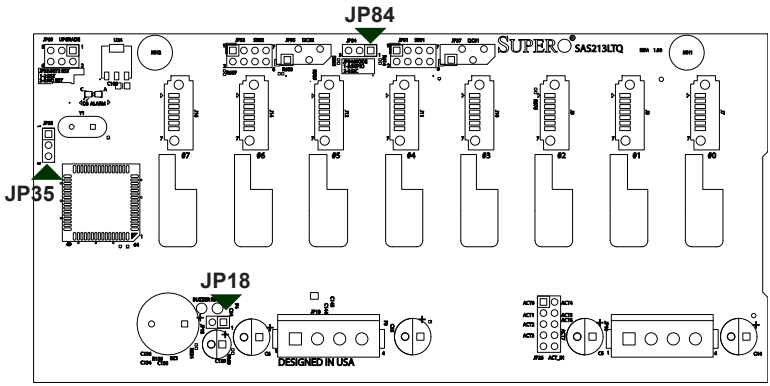
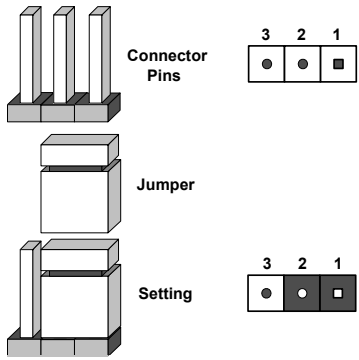


Figure 2-2: Front Jumpers

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper	**1-2 Jumper Setting**	**2-3 Jumper Setting**
JP35	9072 Reset	No Reset

Jumper	**Open (Jumper Off)**	**Closed (Jumper On)**
JP18	Buzzer Enabled*	Buzzer Disabled*

*The buzzer sound indicates that a condition requiring immediate attention has occurred.

The buzzer alarm is triggered by the following conditions:

1. Hard drive failure
2. System temperature over 45º Celsius.

I²C and SGPIO Modes and Jumper Settings

This backplane can utilize I²C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumper. The following information details which jumper must be configured to use SGPIO mode or restore your backplane to I²C mode.

Jumper	1-2 Jumper Setting	2-3 Jumper Setting
JP84	SGPIO Mode (Default)	I²C Mode

Front LED Indicators

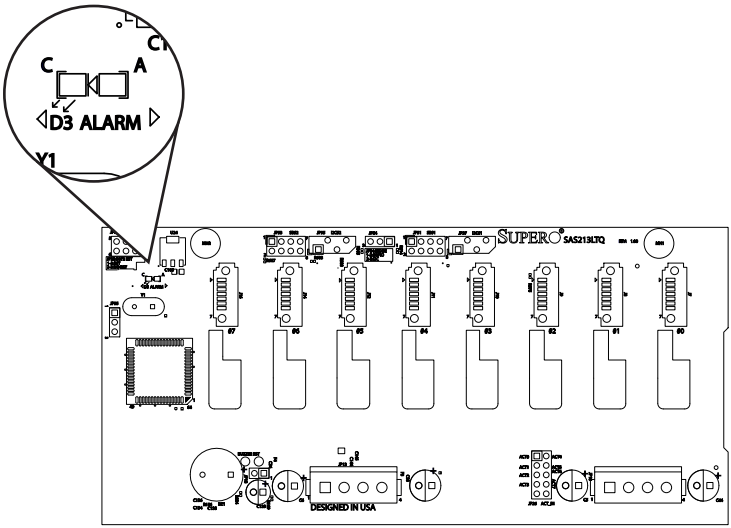


Figure 2-3: Front LED

Front Panel LED		
LED	**State**	**Specification**
D3	On	Alarm indicating an overheat condition or drive failure

2-4 Rear Connectors and LED Indicators

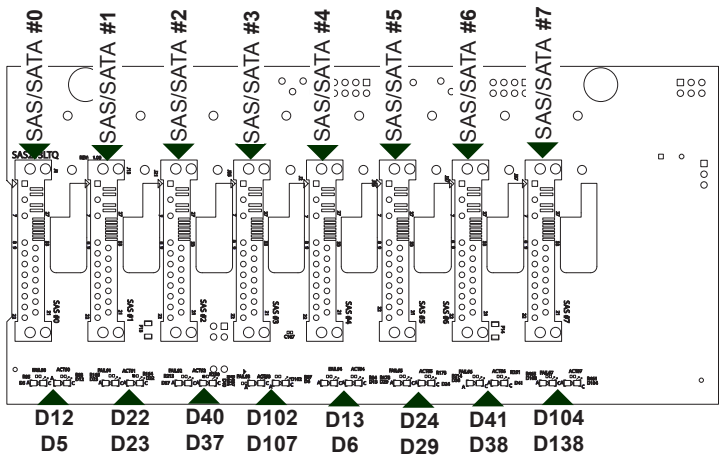


Figure 2-4: Rear LEDs

Rear SAS/SATA Connectors	
Rear Connector	**SAS Drive Number**
SAS/SATA #0	SAS/SATA HDD #0
SAS/SATA #1	SAS/SATA HDD #1
SAS/SATA #2	SAS/SATA HDD #2
SAS/SATA #3	SAS/SATA HDD #3
SAS/SATA #4	SAS/SATA HDD #4
SAS/SATA #5	SAS/SATA HDD #5
SAS/SATA #6	SAS/SATA HDD #6
SAS/SATA #7	SAS/SATA HDD #7

Rear LED Indicators		
Rear LED	**Hard Drive Activity (Blue LED)**	**Failure LED (Red LED)**
SAS/SATA #0	D12	D5
SAS/SATA #1	D22	D23
SAS/SATA #2	D40	D37
SAS/SATA #3	D102	D107
SAS/SATA #4	D13	D6
SAS/SATA #5	D24	D29
SAS/SATA #6	D41	D38
SAS/SATA #7	D104	D108

Disclaimer (cont.)

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.