BPN-SAS-939H 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 and documentation, is the property of Supermicro and/or its licensors, and is supplied only under a license. Any use or reproduction of this product is not allowed, except as expressly permitted by the terms of said license.

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.
Table of Contents

Contacting Supermicro.............................................................................................................. iv
Returning Merchandise for Service.......................................................................................... v

Chapter 1 BPN-SAS-938H Safety Guidelines
1-1 ESD Safety Guidelines .................................................................................................. 1-1
1-2 General Safety Guidelines ............................................................................................ 1-1
1-3 An Important Note to Users ......................................................................................... 1-2
1-4 Introduction to the SAS-938H Backplane .................................................................. 1-2

Chapter 2 Connectors and Jumpers
2-1 Corresponding Components of the SC939 Chassis .................................................... 2-1
2-2 Front Connectors ............................................................................................................ 2-4
2-3 Front Jumpers and Pin Definitions ................................................................................ 2-6
    Explanation of Jumpers ..................................................................................................... 2-6
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)
Web Site: www.supermicro.com

Asia-Pacific
Address: Super Micro Computer, Inc.
3F, No. 150, Jian 1st Rd.
Zhonghe Dist., New Taipei City 235
Taiwan (R.O.C)
Tel: +886-(2) 8226-3990
Fax: +886-(2) 8226-3992
Email: support@supermicro.com.tw
Tel: +886-(2)-8226-3990
Web Site: www.supermicro.com.tw
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

BPN-SAS-938H Safety Guidelines

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

1-1 ESD Safety Guidelines

*Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to the backplane 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 backplane 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 system, including the SAS-938H backplane.
- Disconnect the power cord before installing or removing any cables from the SAS-938H backplane.
- Make sure that the SAS-938H backplane is securely and properly installed in the chassis to prevent damage to the system due to a 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 backplane you have received may or may not look exactly the same as the graphics shown in this manual.

1-4  **Introduction to the SAS-938H Backplane**

The SAS-938H backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects BPN-SAS-939H Revision 1.03, 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.
2-1  Corresponding Components of the SC939 Chassis

The BPN-SAS-939H backplane is designed with twelve separate sectors, each supporting one motherboard node, two hard drives and sharing a fan with two neighboring sectors.

<table>
<thead>
<tr>
<th>Node</th>
<th>Node Connector</th>
<th>Fan</th>
<th>HDDs</th>
<th>SAS/SATA Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Node 1</td>
<td>J1</td>
<td>Fan 1</td>
<td>A1, A2</td>
<td>SAS#0, SAS#1</td>
</tr>
<tr>
<td>Node 2</td>
<td>J2</td>
<td>Fan 1</td>
<td>B1, B2</td>
<td>SAS#2, SAS#3</td>
</tr>
<tr>
<td>Node 3</td>
<td>J3</td>
<td>Fan 1</td>
<td>C1, C2</td>
<td>SAS#4, SAS#5</td>
</tr>
<tr>
<td>Node 4</td>
<td>J4</td>
<td>Fan 2</td>
<td>D1, D2</td>
<td>SAS#6, SAS#7</td>
</tr>
<tr>
<td>Node 5</td>
<td>J5</td>
<td>Fan 2</td>
<td>E1, E2</td>
<td>SAS#8, SAS#9</td>
</tr>
<tr>
<td>Node 6</td>
<td>J6</td>
<td>Fan 2</td>
<td>F1, F2</td>
<td>SAS#10, SAS#11</td>
</tr>
<tr>
<td>Node 7</td>
<td>J7</td>
<td>Fan 3</td>
<td>G1, G2</td>
<td>SAS#12, SAS#13</td>
</tr>
<tr>
<td>Node 8</td>
<td>J8</td>
<td>Fan 3</td>
<td>H1, H2</td>
<td>SAS#14, SAS#15</td>
</tr>
<tr>
<td>Node 9</td>
<td>J9</td>
<td>Fan 3</td>
<td>I1, I2</td>
<td>SAS#16, SAS#17</td>
</tr>
<tr>
<td>Node 10</td>
<td>J10</td>
<td>Fan 4</td>
<td>J1, J2</td>
<td>SAS#18, SAS#19</td>
</tr>
<tr>
<td>Node 11</td>
<td>J11</td>
<td>Fan 4</td>
<td>K1, K2</td>
<td>SAS#20, SAS#21</td>
</tr>
<tr>
<td>Node 12</td>
<td>J12</td>
<td>Fan 4</td>
<td>L1, L2</td>
<td>SAS#22, SAS#23</td>
</tr>
</tbody>
</table>

Figure 2-1: Corresponding Components In the SC939 Chassis
2-2 Front Connectors

1. Power Connector: J26
2. Power Connector: J28
3. Power Connector: J27
4. Fan1 Connector: JP54
5. Fan2 Connector: JP55
6. Fan3 Connector: JP56
7. Fan4 Connector: JP57
8. MB#0 Node Connector: J1
9. MB#1 Node Connector: J2
10. MB#2 Node Connector: J3
11. MB#3 Node Connector: J4
12. MB#4 Node Connector J5
13. MB#5 Node Connector J6
14. MB#6 Node Connector J7
15. MB#7 Node Connector J8
16. MB#8 Node Connector J9
17. MB#9 Node Connector J10
18. MB#10 Node Connector J11
19. MB#11 Node Connector J12

Figure 2-2: Front Connectors
1. - 3. Power Connectors

These connectors, designated J26, J28 and J27, supply power to the twelve motherboard nodes in the chassis.

4. - 7 Fan Connectors

These connectors, designated JP54, JP55, JP56 and JP57 supply power to the chassis cooling fans.

![System Fans Cables](image)

**Figure 2-3 Default Configuration - Fans Connected Directly to the Backplane**

10 - 19. Motherboard to Backplane Connectors

These connectors, designated J1 through J12 connect the motherboards to the backplane on the chassis as follows:

- J1 - Motherboard node 1
- J2 - Motherboard node 2
- J3 - Motherboard node 3
- J4 - Motherboard node 4
- J5 - Motherboard node 5
- J6 - Motherboard node 6
- J7 - Motherboard node 7
- J8 - Motherboard node 8
- J9 - Motherboard node 9
- J10 - Motherboard node 10
- J11 - Motherboard node 11
- J12 - Motherboard node 12
2-3 Front Jumpers and Pin Definitions

![Figure 2-4: Front Jumpers](image)

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.

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Jumper Settings</th>
<th>Notes</th>
</tr>
</thead>
</table>
| JP36   | Open: All nodes can access PMBus  
Closed: Only one node can access PMBus | Depends upon the motherboard, few motherboards support this function  
**Default setting** |
| JP37   | Open: One PWM control  
Close: Two PWM controls (Default) | Power settings |
| JP38   | Open: General power failure alert  
function  
Closed: Smart power feature enable (Default) | **Power failure alert** |
Notes
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.