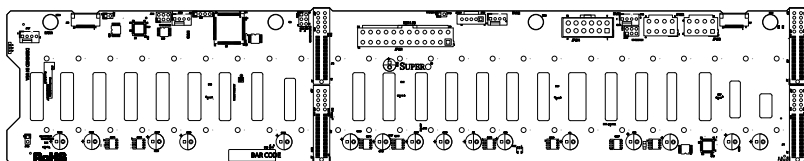


# SUPERO®



## **BPN-SAS3-217HD 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](http://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](http://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: January 22, 2015

Unless you request and receive written permission from Super Micro Computer, Inc., you may not copy any part of this document.

Information in this document is subject to change without notice. Other products and companies referred to herein are trademarks or registered trademarks of their respective companies or mark holders.

Copyright © 2015 by Supermicro Computer, Inc.  
All rights reserved.

**Printed in the United States of America**

---

---

---

## Table of Contents

Contacting Supermicro.....	iv
Returning Merchandise for Service.....	v
<b>Chapter 1 BPN-SAS3-217HD Safety Guidelines</b>	
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 BPN-SAS3-217HD Backplane .....	1-2
<b>Chapter 2 Connectors, Jumpers and LEDs</b>	
2-1 Front Connectors .....	2-1
2-2 Front Jumpers and Pin Definitions.....	2-4
Explanation of Jumpers .....	2-4
2-3 Front LED Indicators .....	2-5
2-4 Rear Connectors and LED Indicators .....	2-6
2-5 SAS/SATA Ports .....	2-8

## 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](mailto:marketing@supermicro.com) (General Information)  
[support@supermicro.com](mailto:support@supermicro.com) (Technical Support)

Web Site: [www.supermicro.com](http://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](mailto:sales@supermicro.nl) (General Information)  
[support@supermicro.nl](mailto:support@supermicro.nl) (Technical Support)  
[rma@supermicro.nl](mailto:rma@supermicro.nl) (Customer Support)

Web Site: [www.supermicro.nl](http://www.supermicro.nl)

### 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](mailto:support@supermicro.com.tw)

Web Site: [www.supermicro.com.tw](http://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-SAS3-217HD 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 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 computer, including the BPN-SAS3-217HD backplane.
- Disconnect the power cable before installing or removing any cables from the BPN-SAS3-217HD backplane.
- Make sure that the BPN-SAS3-217HD backplane 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.

## **1-4 Introduction to the BPN-SAS3-217HD Backplane**

The BPN-SAS3-217HD 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-SAS3-217HD Revision 1.00, the most current release available at the time of publication. Always refer to the Supermicro web site at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.



## Chapter 2

### Connectors, Jumpers and LEDs

#### 2-1 Front Connectors

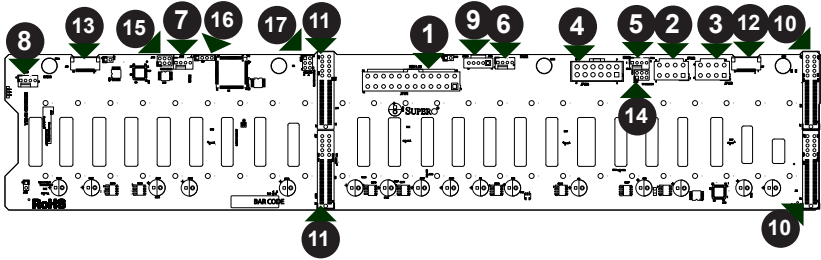


Figure 2-1. Front Connectors

- |                                     |   |
|-------------------------------------|---|
| 1. Main Power Connector: JPW1       | 9. Power Supply SM Bus Connector: JPI <sup>2</sup> C1       |
| 2. Secondary Power Connector: JPW2  | 10. MB-A hot plug connector: JF1, JF2                       |
| 3. Secondary Power Connector: JPW3  | 11. MB-B hot plug connector: JF3, JF4                       |
| 4. Secondary Power Connector: JPW4  | 12. Backplane to front panel connector for MB-A: <b>J27</b> |
| 5. Chassis Fan Connector: Fan1 JP54 | 13. Backplane to front panel connector for MB-B: <b>J28</b> |
| 6. Chassis Fan Connector: Fan2 JP55 | 14. Upgrade #1 JP70   |
| 7. Chassis Fan Connector: Fan3 JP56 | 15. Upgrade #2 JP71   |
| 8. Chassis Fan Connector Fan4 JP57  | 16. MCU Debug port <b>J25</b>                               |
|                                     | 17. MCU firmware upgrade port JP69                          |

## 1. - 4. Power Supply Connectors

These connectors, designated JPW1, JPW2, JPW3, and JPW4 supply power to the two motherboard nodes in the chassis.

## 5. - 8. Chassis Fan Connectors

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

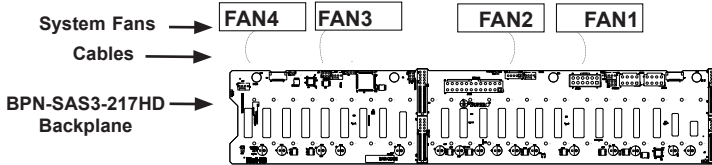


Figure 2-2. Default Configuration - Fans Connected Directly to the Backplane

## 9. Power Supply SM Bus Connector

The 5-pin connector, designated JPI2C1, connects the power supply SMBus to the MCU.

## 10- 11. Motherboard to Backplane Connectors

JF1 and JF2 connect motherboard A to the backplane on the chassis. JF3 and JF4 connect motherboard B to the backplane.

## 12-13. Backplane to Front Panel Headers

J27 and J28 connect by cables to the chassis front control panels--J27 connects to the panel for serverboard A, J28 connects to the panel for serverboard B.

## 14-15. Upgrade Connectors #1 - #2

These connectors are designated JP70 and JP71. They are for the manufacturer's diagnostic use only.

## 16. Debug MCU

J25 is a port to debug the MCU firmware.

## 17. Upgrade MCU

JP69 is a port to upgrade the MCU firmware.

## 2-2 Front Jumpers and Pin Definitions

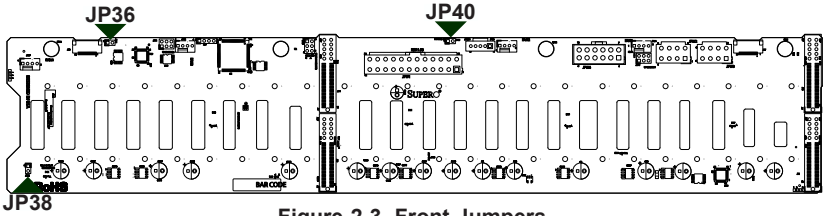
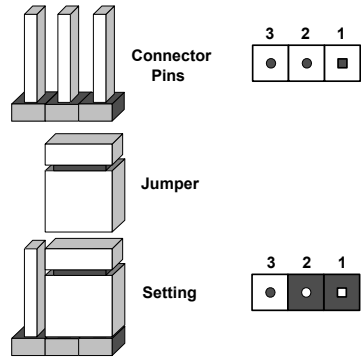


Figure 2-3. Front Jumpers

### 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 Settings	
Jumper	Jumper Settings
JP36	Open: Default Closed: Any one button for power on
JP38	Open: Default Closed: LED test
JP40	Open: Default Closed: Power supply on

## 2-3 Front LED Indicators

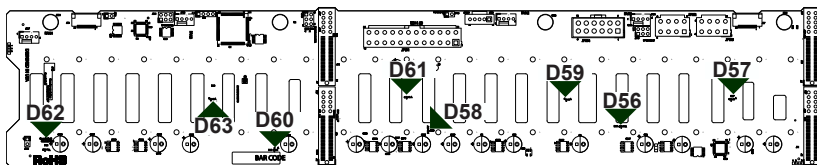


Figure 2-4. Front LEDs

Front LEDs		
LED	State	Specification
D56	On	Indicates that VCC12-1 power is on
D57	On	Indicates that VCC5-1 power is up
D58	On	Indicates that VCC12-2 power is up
D59	On	Indicates that VCC5-2 power is up
D60	On	Indicates that VCC12-3 power is up
D61	On	Indicates that VCC5-3 power is up
D62	On	Indicates that VCC12-4 power is up
D63	On	Indicates that VCC5-4 power is up

## 2-4 Rear Connectors and LED Indicators

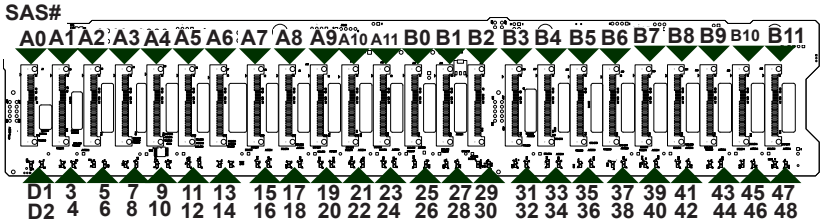


Figure 2-5. Rear Connectors and LEDs

Rear SAS/SATA Connectors			
Rear Connector	SAS Drive Number	Rear Connector	SAS Drive Number
SAS-#A0	SAS/SATA-A0	SAS-#B0	SAS/SATA-B0
SAS-#A1	SAS/SATA-A1	SAS-#B1	SAS/SATA-B1
SAS-#A2	SAS/SATA-A2	SAS-#B2	SAS/SATA-B2
SAS-#A3	SAS/SATA-A3	SAS-#B3	SAS/SATA-B3
SAS-#A4	SAS/SATA-A4	SAS-#B4	SAS/SATA-B4
SAS-#A5	SAS/SATA-A5	SAS-#B5	SAS/SATA-B5
SAS-#A6	SAS/SATA-A6	SAS-#B6	SAS/SATA-B6
SAS-#A7	SAS/SATA-A7	SAS-#B7	SAS/SATA-B7
SAS-#A8	SAS/SATA-A8	SAS-#B8	SAS/SATA-B8
SAS-#A9	SAS/SATA-A9	SAS-#B9	SAS/SATA-B9
SAS-#A10	SAS/SATA-A10	SAS-#B10	SAS/SATA-B10
SAS-#A11	SAS/SATA-A11	SAS-#B11	SAS/SATA-B11

Rear LED Indicators					
Rear Connector	FAIL LED	ACT LED	Rear Connector	FAIL LED	ACT LED
SAS-#A0	D2	D1	SAS-#B	D26	D25
SAS-#A1	D4	D3	SAS-#B1	D28	D27
SAS-#A2	D6	D5	SAS-#B2	D30	D29
SAS-#A3	D8	D7	SAS-#B3	D32	D31
SAS-#A4	D10	D9	SAS-#B4	D34	D33
SAS-#A5	D12	D11	SAS-#B5	D36	D35
SAS-#A6	D14	D13	SAS-#B6	D38	D37
SAS-#A7	D16	D15	SAS-#B7	D40	D39
SAS-#A8	D18	D17	SAS-#B8	D42	D41
SAS-#A9	D20	D19	SAS-#B9	D44	D43
SAS-#A10	D22	D21	SAS-#B10	D46	D45
SAS-#A11	D24	D23	SAS-#B11	D48	D47

## 2-5 SAS/SATA Ports

The BPN-SAS3-217HD backplane is designed with two separate nodes that support two motherboards independently of each other. The SAS ports are used to connect the drives. The twenty-four ports are designated A0-11 and B0-11. Each port is also compatible with SATA drives.

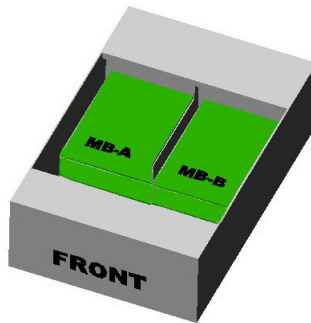


Figure 2-6. Motherboard Locations In the Chassis

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.