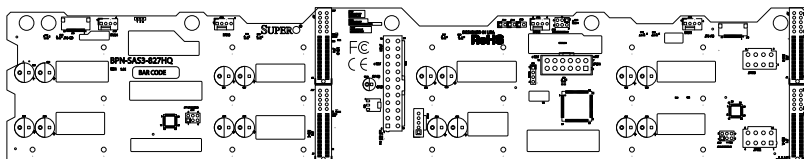


SUPERO[®]



BPN-SAS3-827HQ Backplane

USER'S GUIDE

Rev. 1.0

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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.

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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-SAS3-827HQ 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-SAS3-827HQ backplane.
- Disconnect the power cable before installing or removing any cables from the BPN-SAS3-827HQ backplane.
- Make sure that the BPN-SAS3-827HQ 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-SAS3-827HQ Backplane

The BPN-SAS3-827HQ 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-SAS3-827HQ Revision 1.01, 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

Connectors, Jumpers and LEDs

2-1 Front Connectors

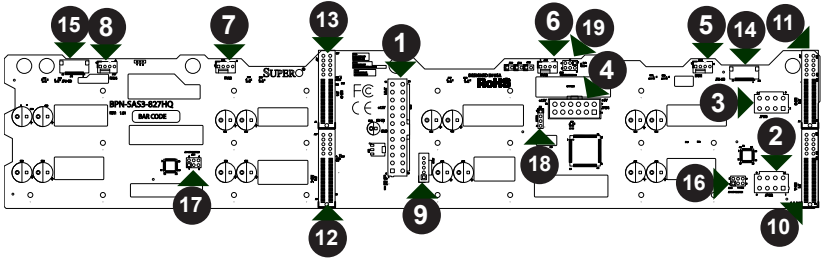


Figure 2-1. Front Connectors

- | | |
|--|---|
| 1. Main Power Connector: JPW1 | 10. MB-A hot plug connector: JF1 |
| 2. Secondary Power Connector: JPW2 | 11. MB-B hot plug connector: JF2 |
| 3. Secondary Power Connector: JPW3 | 12. MB-C hot plug connector: JF3 |
| 4. Secondary Power Connector: JPW4 | 13. MB-D hot plug connector: JF4 |
| 5. Chassis Fan Connector: Fan1 JP54 | 14. Backplane to front panel connector for motherboards A and B: JF5-AB |
| 6. Chassis Fan Connector: Fan2 JP55 | 15. Backplane to front panel connector for motherboards C and D: JF6-CD |
| 7. Chassis Fan Connector: Fan3 JP56 | 16. Upgrade#1: JP70 |
| 8. Chassis Fan Connector Fan4 JP57 | 17. Upgrade#2: JP71 |
| 9. Power Supply SM bus Connector: JPI²C1 | 18. MCU Debug port J25 |
| | 19. MCU firmware upgrade port JP69 |

1-4. Power Connectors

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

5-8. Chassis Fan Connectors

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

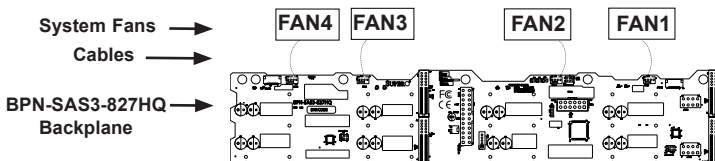


Figure 2-2. Default Configuration - Fans Connected Directly to the Backplane

9. Power Supply Connector

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

10-13. Motherboard to Backplane Connectors

These connectors, designated JF1, JF2, JF3 and JF4 connect the motherboards to the backplane on the chassis. JF1 connects to motherboard A. JF2 connects to motherboard B. JF3 connects to motherboard C and JF4 connects to motherboard D. See the table on the previous page to determine the locations of the motherboards within the chassis.

14-15. Backplane to Front Panel Headers

These connectors are designated JF5 and JF6. They connect the backplane to the front LED panels on the chassis. JF5 connects to the LED display panel for motherboards A and B. JF6 connects to the LED display panel for motherboards C and D.

16-18. Upgrade Connectors #1 - #2

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

19. Debug MCU

J25 is a port to debug the MCU firmware.

20. Upgrade MCU

JP69 is a port to upgrade the MCU firmware.

2-2 Front Jumpers and Pin Definitions

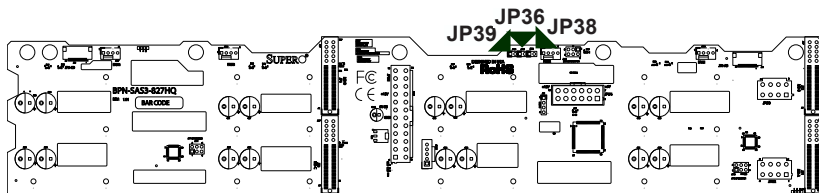
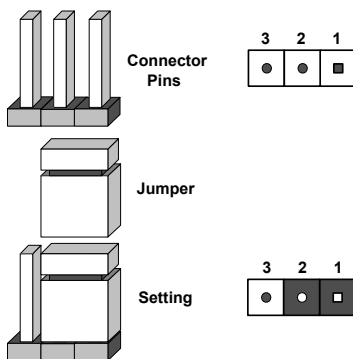


Figure 2-3. Front Jumpers

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
JP39	Open: Default Closed: Power supply on

2-3 Front LED Indicator

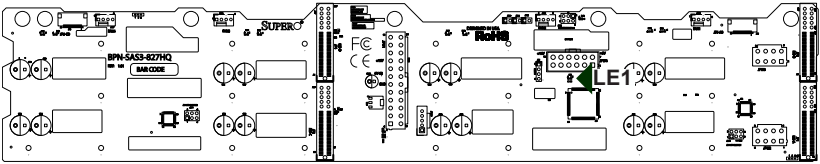


Figure 2-4. Front LED

Front Panel LED		
LED	State	Specification
Heartbeat LED: LE1	Blinking	MCU heartbeat LED

2-4 Rear Connectors and LED Indicators

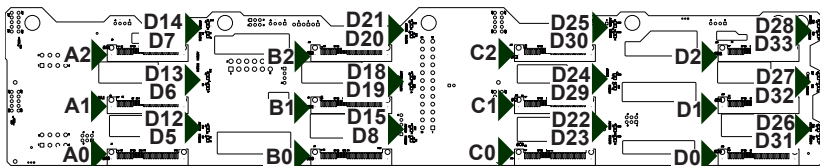


Figure 2-5. Rear Connectors and LEDs

Rear SAS/SATA Connectors			
Rear Connector	SAS Drive Number	Rear Connector	SAS Drive Number
SAS-#A0	SAS/SATA-A0	SAS-#C0	SAS/SATA-C0
SAS-#A1	SAS/SATA-A1	SAS-#C1	SAS/SATA-C1
SAS-#A2	SAS/SATA-A2	SAS-#C2	SAS/SATA-C2
SAS-#B0	SAS/SATA-B0	SAS-#D0	SAS/SATA-D0
SAS-#B1	SAS/SATA-B1	SAS-#D1	SAS/SATA-D1
SAS-#B2	SAS/SATA-B2	SAS-#D2	SAS/SATA-D2

Rear LED Indicators					
Rear Connector	FAIL LED	ACT LED	Rear Connector	FAIL LED	ACT LED
SAS-#A0	D2	D1	SAS-#C0	D26	D25
SAS-#A1	D4	D3	SAS-#C1	D28	D27
SAS-#A2	D6	D5	SAS-#C2	D30	D29
SAS-#B0	D14	D13	SAS-#D0	D38	D37
SAS-#B1	D16	D15	SAS-#D1	D40	D39
SAS-#B2	D18	D17	SAS-#D2	D42	D41

2-5 SAS Ports

The BPN-SAS3-827HQ backplane is designed with four separate nodes, which support from one to four motherboards independently of each other. The SAS ports are used to connect the SAS drive cables. The 24 ports are designated A0, A1, A2, A3, A4, A5, B0, B1, B2, B3, B4, B5, C0, C1, C2, C3, C4, C5, D0, D1, D2, D3, D4, and D5. Each port is also compatible with SATA drives. Use the table below to determine the SAS port to motherboard configuration that is appropriate for your system.

SAS Port to Motherboard Configurations		
Number of Motherboards	SAS Port Connectors	Connect to Motherboard
Using 1 MB	A0, A1, A2	MB-A
Using 2 MBs	A0, A1, A2	MB-A
	B0, B1, B2	MB-B
Using 3 MBs	A0, A1, A2	MB-A
	B0, B1, B2	MB-B
	C0, C1, C2	MB-C
Using 4 MBs	A0, A1, A2	MB-A
	B0, B1, B2	MB-B
	C0, C1, C2	MB-C
	D0, D1, D2	MB-D

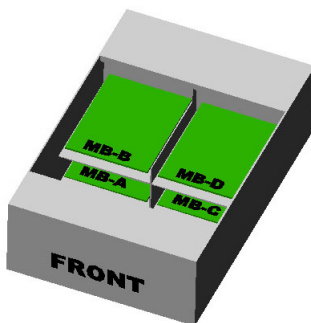


Figure 2-6. Motherboard Locations In the Chassis

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