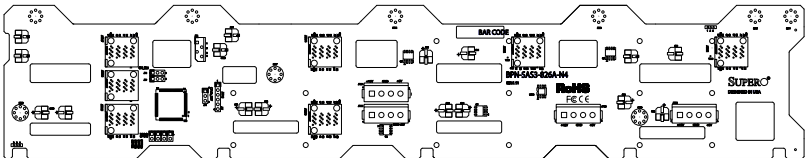




BPN-SAS3-826A-N4 BACKPLANE



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.

Manual Revision 1.0

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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

Guidelines

This chapter offers guidelines for personal and equipment safety, and notes about the BPN-SAS3-826A-N4 version documented in this manual.

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 cord before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the mounting frame in the chassis to prevent damage to the system due to power shortage.

1-3 Version Information

The BPN-SAS3-826A-N4 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-SAS3-826A-N4 Revision 1.11, 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

This manual covers BPN-SAS3-826A-N4 with NVMe capabilities.

2-1 Rear Connector Locations

The following connectors are on the side of the backplane that faces the rear of the chassis. They are marked by silkscreen labels.

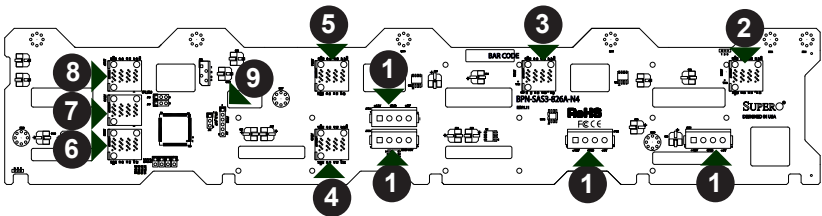


Figure 2-1. Rear Connectors

- | | |
|--|---|
| 1. Power Connectors, 4-pin: JPW1, JPW2, JPW3 and JPW4. | 5. NVMe #0 Connector: JSM4 |
| 2. Mini SAS HD Connector: JSM1 | 6. NVMe #1 Connector: JSM5 |
| 3. Mini SAS HD Connector: JSM2 | 7. NVMe #2 Connector: JSM6 |
| 4. Mini SAS HD Connector: JSM3 | 8. NVMe #3 Connector: JSM7 |
| | 9. JTAG Connector: J27, CPLD upgrade port (6-pin) |

2-2 Rear Connector and Pin Definitions

1. Main Power Connectors

The 4-pin connectors, designated JPW1, JPW2, JPW3 and JPW4 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

2-4. Mini SAS HD Connectors

The three SAS connectors are used to connect the SAS drive cables and are designated JSM1 to JSM3. Each of the three connectors has four ports for a total of twelve ports. These twelve ports are designated SAS#0 - SAS#11. They are also compatible with SATA drives.

5-8. NVMe Connectors

The four NVMe connectors are used to connect the NVMe drive cables. Each connector controls one NVMe SSD.

9. CPLD Upgrade Port

The J27 connector is used to upgrade CPLD.

2-3 Rear Jumper Locations and Pin Definitions

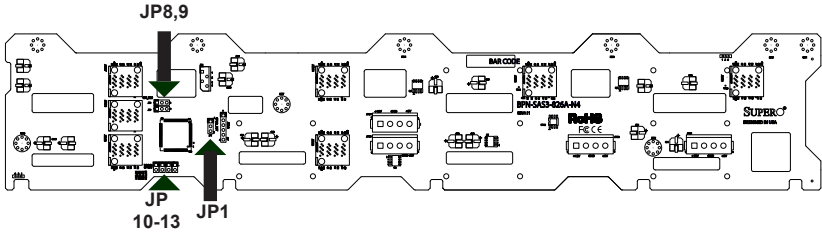


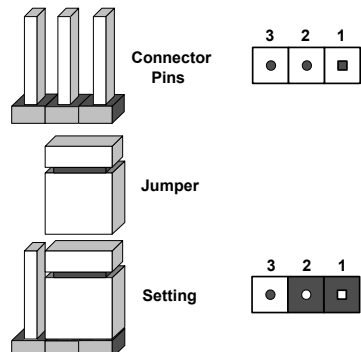
Figure 2-2. Rear Jumpers

Jumper Settings		
Jumper	Settings	Note
JP1	1-2	Not used
JP8, JP9	see table below	NVMe mapping to CPU
JP10, JP11, JP12, JP13	Open	Reserved for future

Jumpers		NVMe to CPU Connection	NVMe Cables	
JP9 Pins	JP8 Pins	NVMe Drive Slots	VPP from CPU1	VPP from CPU2
2-3	2-3	Slot 0-3 connected to CPU 1	JSM4	
2-3	1-2	Slot 0-2 connected to CPU 1 Slot 3 connected to CPU 2	JSM4	JSM7
1-2	2-3	Slot 0-1 connected to CPU 1 Slot 2-3 connected to CPU 2	JSM4	JSM6
1-2	1-2	Slot 0 connected to CPU 1 Slot 1-3 connected to CPU 2	JSM4	JSM5

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.



2-4 Front Connectors and LED Indicators

All connectors support SAS3. Connectors for SAS #8 through #11 are hybrid ports that support both SAS3 and NVMe.

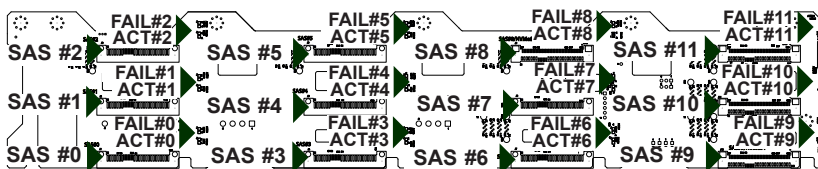


Figure 2-4. Front Connectors and LEDs

Front SAS/SATA Connectors and LED Indicators			
Connector Number and HDD Number	Label	HDD Activity LED (blue)	Failure LED (red)
SAS #0	J1	ACT#0	FAIL#0
SAS #1	J2	ACT#1	FAIL#1
SAS #2	J3	ACT#2	FAIL#2
SAS #3	J4	ACT#3	FAIL#3
SAS #4	J5	ACT#4	FAIL#4
SAS #5	J6	ACT#5	FAIL#5
SAS #6	J7	ACT#6	FAIL#6
SAS #7	J8	ACT#7	FAIL#7
SAS #8/NVMe #0*	J9	ACT#8	FAIL#8**
SAS #9/NVMe #1*	J10	ACT#9	FAIL#9**
SAS #10/NVMe #2*	J11	ACT#10	FAIL#10**
SAS #11/NVMe #3*	J12	ACT#11	FAIL#11**

*Hybrid ports; SAS or NVMe

**This failure LED is multi-color, as described in the table below.

Color and State	Indication
Red, solid	Failure
Red, blinking at 1Hz	Rebuild
Red, blinking at 4Hz	Identify
Amber, blinking	Attention! Do not remove NVMe device
Green	NVMe device ready be removed

Notes

Disclaimer (cont.)

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