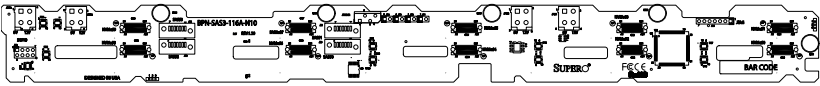




BPN-SAS3-116A-N10  
BACKPLANE



USER'S GUIDE

1.0

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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)"

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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.

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## Notes

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## Chapter 1

### Guidelines

This chapter offers guidelines for personal and equipment safety, and notes about the BPN-SAS3-116A-N10 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 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 Version Information

The BPN-SAS3-116A-N10 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-SAS3-116A-N10, Revision 1.20, the most current release available at the time of publication. Refer to the Supermicro website at [www.supermicro.com](http://www.supermicro.com) for the latest updates, compatible parts and supported configurations.

## Chapter 2

### Connectors, Jumpers and LEDs

This manual covers BPN-SAS3-116A-N10 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.

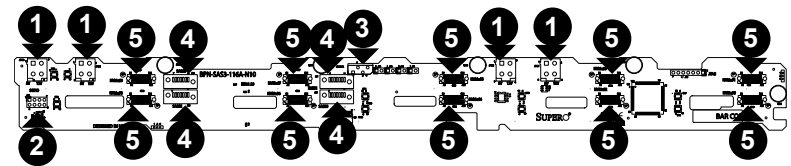


Figure 2-1. Rear Connector Locations

- |   |   |
|---|---|
| 1. Power Connectors: JPW1, JPW2, JPW3 and JPW4 (4-pin). | 4. SAS3 Connectors: JS0, JS1, JS2, and JS3. |
| 2. Sideband Connector: SGPIO, J10.                      | 5. NVMe Connectors: CN#0-Cn#9.              |
| 3. JNVI2C2 Connector.                                   |   |

## 2-2 Rear Connector Definitions

### 1. Power Connectors

These 4-pin connectors are designated JPW1, JPW2, JPW3 and JPW4. They provide power to the backplane.

4-Pin Power Connector (JPW3)	
Pin#	Definition
1, 2	Ground
3	+5V
4	+12V

### 2. Sideband Connector

This is the sideband connector for SAS3 and is designated SGPIO J10.

Sideband Connector (T-SGPIO1)			
Pin	Definition	Pin	Definition
2	SDataIn (SGPIO Data In)	1	N/C
4	SDataOut (SGPIO Data Out)	3	GND
6	GND	5	SLoad (SGPIO Load)
8	N/C	7	SClock (SGPIO Clock)

### 3. JNVI2C2 Connector

This connector is normally left disconnected, and is designated JNVI2C2.

### 4. SAS3 Connectors

JS0, JS1, JS2 and JS3 are dedicated for SAS 3 or SATA 3 drive internal cables.

### 5. NVMe Connectors

The NVMe connectors are used to connect the NVMe drive cables. Each connector controls one NVMe SSD. Pins are defined according to the NVMe standard. The connectors are designated CN#0 through CN#9.

## 2-3 Rear Jumpers

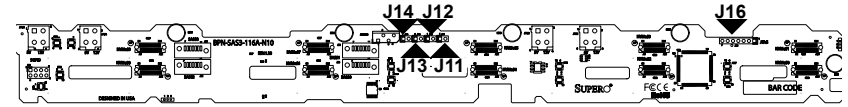
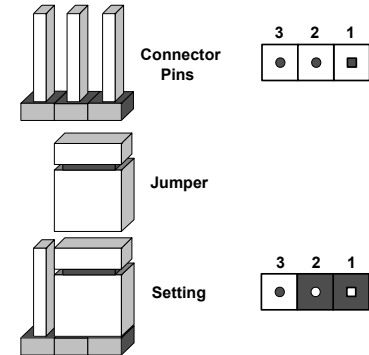


Figure 2-2. Rear Jumpers

Jumper Settings		
Jumper	Description	Note
J16	JTAG (CPLD upgrade)	For manufacturer's use only.
J11, J12, J13, J14	Closed	For manufacturer's use only.

### 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

Connectors for NVMe SSD drive numbers #0 through #5 are dedicated NVMe SSD drives only. SAS #0 - SAS #3 are hybrid ports that support SAS3, SATA or NVMe.

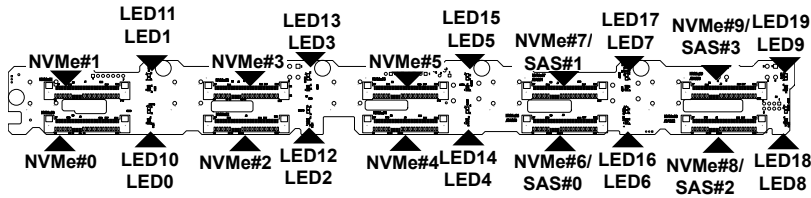


Figure 2-3. Front Connectors and LEDs

## Notes

Front Hard Drive Connectors and LED Indicators			
Drive Number	Label	HDD Activity LED (Blue)	Status LED** (Red/Amber/Green)
NVMe#0	J0	LED10	LED0
NVMe #1	J1	LED11	LED1
NVMe #2	J2	LED12	LED2
NVMe #3	J3	LED13	LED3
NVMe #4	J4	LED14	LED4
NVMe #5	J5	LED15	LED5
NVMe #6/SAS#0*	J6	LED16	LED6**
NVMe #7/SAS#1*	J7	LED17	LED7**
NVMe#8/SAS#2*	J8	LED18	LED8**
NVMe#9/SAS#3*	J9	LED19	LED9**

\*Hybrid ports; NVMe or SAS

\*\*The Status LED is bi-color. Red indicates Failure/Rebuild; green indicates NVMe SSD ready to remove.

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 to be removed

Disclaimer (cont.)

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