# BPN-SAS3-119A-N12 Backplane

## USER'S GUIDE

Rev. 1.0

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## 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) |

Asia-Pacific

| | |
|---|---|
| Address: | Super Micro Computer, Inc. |
| | 4F, No. 232-1, Liancheng Rd. |
| | Chung-Ho 235, Taipei County |
| | Taiwan, R.O.C. |
| Tel: | +886-(2) 8226-3990 |
| Fax: | +886-(2) 8226-3991 |
| Web Site: | www.supermicro.com.tw |
| Technical Support: | |
| Email: | support@supermicro.com.tw |
| Tel: | 886-2-8226-1900 |

# 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.

# Chapter 1

# 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 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    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-SAS3-119A-N12 Backplane

The BPN-SAS3-119A-N12 backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts, and supported configurations.

# Chapter 2

# Connectors and Pin Definitions

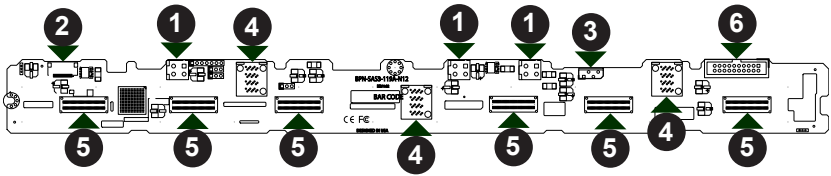## 2-1    Front Connectors



**Figure 2-1. Front Connectors**

1. Power Connectors: JPW1, JPW2, and JPW3.

2. Backplane to Front Panel Connector: JF2.

3. I2C Connector: J25.

4. Mini-SAS HD Connectors: JSM1, JSM2, and JSM3.

5. NVMe Connectors: CN1-CN6.

6. Motherboard to Backplane Connector: JF1.

## 2-2    Front Connector Pin Definitions

### #1. Backplane Main Power Connectors

These 4-pin connectors, designated JPW1, JPW2, and JPW3, provide power to the backplane. See the table on the right for pin definitions.

| 4-Pin Power Connectors (JPW1, JPW2, and JPW3) | |
|---|---|
| Pin# | Definition |
| 1, 2 | Ground |
| 3 | +5V |
| 4 | +12V |

### #2. Backplane to Front Panel Header

This connector is designated JF2. It connects the backplane to the front LED panels on the chassis.

### #3. I²C Connector

This connector, designated J25, is used to monitor HDD activity and status. It is only required when specified by a system manual. See the table on the right for pin definitions.

| I²C Connector Pin Definitions (J25) | |
|---|---|
| Pin# | Definition |
| 1 | Data |
| 2 | Ground |
| 3 | Clock |
| 4 | No Connection |

### #4. Mini-SAS HD Connectors

Connect a SAS/SATA drive cable to these ports when configuring the SAS/SATA drives. The ports are designated JSM1, for drives at SAS#0-3, JSM2, for drives at SAS#4-7, and JSM3, for drives at SAS#8-11 (see section 2-4 for drive locations). The ports are also compatible with SATA drives. However, mixing SAS and SATA drives in the same enclosure is not recommended.

**#5. NVMe Connectors**

Connect NVMe drive cables to these NVMe ports, designated CN1-CN6, when configuring the NVMe drives. CN1 is for drives at NVMe#0-1, CN2 is for drives at NVMe#2-3, CN3 is for drives at NVMe#4-5, CN4 is for drives at NVMe#6-7, CN5 is for drives at NVMe#8-9, and CN6 is for drives at NVMe#10-11 (see section 2-4 for NVMe drive locations). SlimSAS cables should be used to connect these ports to the corresponding ports on motherboard X11DPU-V-P.

**#6. Motherboard to Backplane Connector**

This 20-pin connector, designated JF1, connects the motherboard to the backplane on the chassis using a flat ribbon cable.
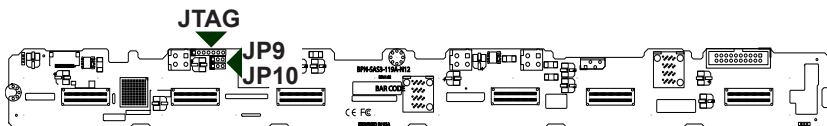
## 2-3 Front Jumper Locations and Pin Definitions

**JTAG**

**JP9**
**JP10**



Figure 2-2. 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.



Connector Pins
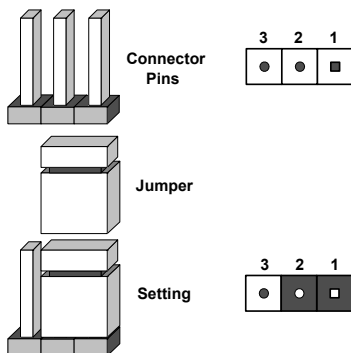
Jumper

Setting

| Jumper Settings | | | |
|---|---|---|---|
| **JP8** | **JP9** | **JP10** | **Description** |
| 2-3 | 2-3 | 2-3 | Drives #0-11 connected to CPU1 PCIe. |
| 1-2 | 2-3 | 2-3 | Drives #0-9 connected to CPU1 PCIe, drives #10-11 connected to CPU2 PCIe. |
| 2-3 | 1-2 | 2-3 | Drives #0-7 connected to CPU1 PCIe, drives #8-11 connected to CPU2 PCIe. |
| 1-2 | 1-2 | 2-3 | Drives #0-5 connected to CPU1 PCIe, drives #6-11 connected to CPU2 PCIe. (default) |
| 2-3 | 2-3 | 1-2 | Drives #0-3 connected to CPU1 PCIe, drives #4-11 connected to CPU2 PCIe. |
| 1-2 | 2-3 | 1-2 | Drives #0-1 connected to CPU1 PCIe, drives #2-11 connected to CPU2 PCIe. |
| 2-3 | 1-2 | 1-2 | N/A |
| 1-2 | 1-2 | 1-2 | N/A |

| Other Jumper Settings | | |
|---|---|---|
| **Jumper** | **Setting** | **Note** |
| JTAG | Open | CPLD upgrade port. For internal use only. |

## 2-4    Rear Connectors and LED Indicators
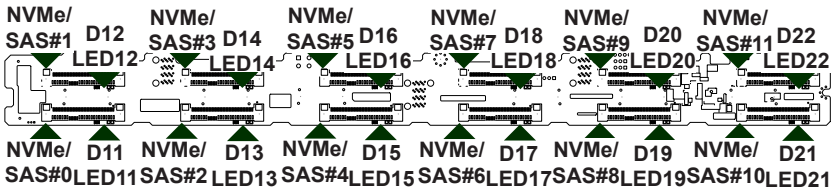


**Figure 2-3. Rear Connectors and LEDs**

| Front Hard Drive Connectors and LED Indicators | | |
|---|---|---|
| **Drive Number** | **Status LED (Red/Green)** | **HDD Activity LED (Blue)** |
| NVMe/SAS# 0 | D11 | LED11 |
| NVMe/SAS #1 | D12 | LED12 |
| NVMe/SAS #2 | D13 | LED13 |
| NVMe/SAS #3 | D14 | LED14 |
| NVMe/SAS #4 | D15 | LED15 |
| NVMe/SAS #5 | D16 | LED16 |
| NVMe/SAS #6 | D17 | LED17 |
| NVMe/SAS #7 | D18 | LED18 |
| NVMe/SAS #8 | D19 | LED19 |
| NVMe/SAS #9 | D20 | LED20 |
| NVMe/SAS #10 | D21 | LED21 |
| NVMe/SAS #11 | D22 | LED22 |

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

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