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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
Release Date: June 14, 2016

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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.
Chapter 1

Guidelines

This chapter offers guidelines for personal and equipment safety, and notes about the BPN-SAS3-217HD-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 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-SAS3-217HD-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-SAS3-217HD-N4, Revision 1.00, the most current release available at the time of publication. 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-SAS3-217HD-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.

1. Main Power Connector: JPW1
2. Secondary Power Connector: JPW2 (2x4 pin)
3. Secondary Power Connector: JPW3 (2x4 pin)
4. Secondary Power Connector: JPW4 (2x6 pin)
5. Chassis Fan Connector: Fan1 JP54 (4-pin)
7. Chassis Fan Connector: Fan3 JP56 (4-pin)
8. Chassis Fan Connector Fan4 JP57 (4-pin)
9. Power Supply SM Bus Connector: JPI2C1 (5-pin)
10. Node A connector: JF1
11. Node B connector: JF2
12. Backplane to front panel connector for node A: J27 (20-pin)
13. Backplane to front panel connector for node B: J28 (20-pin)
14. CPLD Program Port: JP70 (7-pin)
15. MCU Serial port: J25 (4-pin)
16. MCU firmware upgrade port: JP69 (6-pin)

Figure 2-1. Rear Connectors
2-2 Rear Connector Definitions

1-4. Power Supply Connectors
These connectors, designated JPW1, JPW2, JPW3, and JPW4, supply power to the two motherboard nodes and to the 24 hard drives.

5-8. Chassis Fan Connectors
These connectors, designated JP54, JP55, JP56 and JP57 supply power to the cooling fans.

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 connects the Node 1 motherboard to the backplane; JF2 connects the Node 2 motherboard.

12-13. Backplane to Front Panel Headers
J27 and J28 connect cables to the chassis front control panels--J27 connects to the panel on the left side of the chassis, J28 connects to the right side.

14. CPLD Program Port
JP70 is used to update the CPLD firmware.

15. MCU Serial Port
J25 is a port to debug the MCU firmware.

16. MCU Upgrade Port
JP69 is a port to upgrade the MCU firmware.
2-3 Rear Jumpers and Pin Definitions

Figure 2-3. Rear 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.

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Jumper Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP36</td>
<td>Open: Default</td>
</tr>
<tr>
<td></td>
<td>Closed: Any one button for power on</td>
</tr>
<tr>
<td>JP38</td>
<td>Manufacturer testing only</td>
</tr>
<tr>
<td>JP40</td>
<td>Open: Default</td>
</tr>
<tr>
<td></td>
<td>Closed: Power on</td>
</tr>
</tbody>
</table>
2-3 Rear LED Indicators

Figure 2-4. Rear LEDs

<table>
<thead>
<tr>
<th>Rear LEDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>LE1</td>
</tr>
</tbody>
</table>
2-4 Front Connectors and LED Indicators

SAS/SATA/NVMe

The front of the backplane has 24 sockets to connect hard disk drives, along with LEDs indicators. The BPN-SAS3-217HD-N4 is designed to work with two separate computing nodes, each with an independent motherboard. The backplane supports twelve drives for each node. The drive ports are designated A0-A11 and B0-B11, where A represents one node and B the other.

![Figure 2-5. Motherboard Locations In the Chassis](image)

![Figure 2-6. Front Connectors](image)
### Drive Connectors and LED Indicators

<table>
<thead>
<tr>
<th>Drive Number</th>
<th>Label</th>
<th>HDD Activity LED (blue)</th>
<th>Failure LED (red/amber/green**)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVMe #A0*</td>
<td>J1</td>
<td>ACT#A0</td>
<td>FAIL#A0**</td>
</tr>
<tr>
<td>NVMe #A1*</td>
<td>J2</td>
<td>ACT#A1</td>
<td>FAIL#A1**</td>
</tr>
<tr>
<td>NVMe #A2*</td>
<td>J3</td>
<td>ACT#A2</td>
<td>FAIL#A2**</td>
</tr>
<tr>
<td>NVMe #A3*</td>
<td>J4</td>
<td>ACT#A3</td>
<td>FAIL#A3**</td>
</tr>
<tr>
<td>SAS #A4</td>
<td>J5</td>
<td>ACT#A4</td>
<td>FAIL#A4</td>
</tr>
<tr>
<td>SAS #A5</td>
<td>J6</td>
<td>ACT#A5</td>
<td>FAIL#A5</td>
</tr>
<tr>
<td>SAS #A6</td>
<td>J7</td>
<td>ACT#A6</td>
<td>FAIL#A6</td>
</tr>
<tr>
<td>SAS #A7</td>
<td>J8</td>
<td>ACT#A7</td>
<td>FAIL#A7</td>
</tr>
<tr>
<td>SAS #A8</td>
<td>J9</td>
<td>ACT#A8</td>
<td>FAIL#A8</td>
</tr>
<tr>
<td>SAS #A9</td>
<td>J10</td>
<td>ACT#A9</td>
<td>FAIL#A9</td>
</tr>
<tr>
<td>SAS #A10</td>
<td>J11</td>
<td>ACT#A10</td>
<td>FAIL#A10</td>
</tr>
<tr>
<td>SAS #A11</td>
<td>J12</td>
<td>ACT#A11</td>
<td>FAIL#A11</td>
</tr>
<tr>
<td>NVMe #B0*</td>
<td>J13</td>
<td>ACT#B0</td>
<td>FAIL#B0**</td>
</tr>
<tr>
<td>NVMe #B1*</td>
<td>J14</td>
<td>ACT#B1</td>
<td>FAIL#B1**</td>
</tr>
<tr>
<td>NVMe #B2*</td>
<td>J15</td>
<td>ACT#B2</td>
<td>FAIL#B2**</td>
</tr>
<tr>
<td>NVMe #B3*</td>
<td>J16</td>
<td>ACT#B3</td>
<td>FAIL#B3**</td>
</tr>
<tr>
<td>SAS #B4</td>
<td>J17</td>
<td>ACT#B4</td>
<td>FAIL#B4</td>
</tr>
<tr>
<td>SAS #B5</td>
<td>J18</td>
<td>ACT#B5</td>
<td>FAIL#B5</td>
</tr>
<tr>
<td>SAS #B6</td>
<td>J19</td>
<td>ACT#B6</td>
<td>FAIL#B6</td>
</tr>
<tr>
<td>SAS #B7</td>
<td>J20</td>
<td>ACT#B7</td>
<td>FAIL#B7</td>
</tr>
<tr>
<td>SAS #B8</td>
<td>J21</td>
<td>ACT#B8</td>
<td>FAIL#B8</td>
</tr>
<tr>
<td>SAS #B9</td>
<td>J22</td>
<td>ACT#B9</td>
<td>FAIL#B9</td>
</tr>
<tr>
<td>SAS #B10</td>
<td>J23</td>
<td>ACT#B10</td>
<td>FAIL#B10</td>
</tr>
<tr>
<td>SAS #B11</td>
<td>J24</td>
<td>ACT#B11</td>
<td>FAIL#B11</td>
</tr>
</tbody>
</table>

*NVMe ports

**For NVMe ports, this failure LED is bi-color, as described on the next page.
### Failure LED States

<table>
<thead>
<tr>
<th>Color and State</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red, solid</td>
<td>Failure</td>
</tr>
<tr>
<td>Red, blinking at 1Hz</td>
<td>Rebuild</td>
</tr>
<tr>
<td>Red, blinking at 4Hz</td>
<td>Identify</td>
</tr>
<tr>
<td>Amber, blinking</td>
<td>Attention! Do not remove NVMe device</td>
</tr>
<tr>
<td>Green</td>
<td>NVMe device ready be removed</td>
</tr>
</tbody>
</table>
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