BPN-SAS-217HQ Backplane

USER'S GUIDE

Rev. 1.0b
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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.
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-SAS-217HQ backplane.
- Disconnect the power cable before installing or removing any cables from the BPN-SAS-217HQ backplane.
- Make sure that the BPN-SAS-217HQ 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-SAS-217HQ Backplane

The BPN-SAS-217HQ 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-SAS-217HQ Revision 1.20, 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.
2-1 Front Connectors

1. Main Power Connector: JPW1
2. Secondary Power Connector: JPW2
4. Chassis Fan Connector: Fan1 JP54
5. Chassis Fan Connector: Fan2 JP55
7. Chassis Fan Connector: Fan4 JP57
8. Power Supply Connector: JPI/C1
9. MB-A hot plug connector: JF1
10. MB-B hot plug connector: JF2
11. MB-C hot plug connector: JF3
12. MB-D hot plug connector: JF4
13. Backplane to front panel connector for MB-A,B: JF5
14. Backplane to front panel connector for MB-C,D: JF6
15. Upgrade #1 JP70
16. Upgrade #2 JP71
17. Upgrade #3 JP72
18. Upgrade #4 JP73

Figure 2-1: Front Connectors
1. - 3. Motherboard Power Connectors

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

4. - 7. Chassis Fan Connectors

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

8. Power Supply Connector

The 5-pin connector, designated JP12C1 provides power to the SMBUS and power control signals.

9. - 12. 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.
13. - 14. 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.

15. - 18. Upgrade Connectors #1 - #4

These connectors are designated JP70, JP71, JP72 and JP73. They are for the manufacturer's diagnostic use only.
2-2 Front Jumpers and Pin Definitions

![Figure 2-3: Front Jumpers](image)

**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>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP69</td>
<td>SPI</td>
<td></td>
</tr>
<tr>
<td>JP35</td>
<td>Open: Default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed: LED test, for manufacturing purposes only</td>
<td>LED test</td>
</tr>
<tr>
<td>JP36</td>
<td>Open: Default, multiple power button functionality</td>
<td>Any power button</td>
</tr>
<tr>
<td></td>
<td>Closed: Single power button functionality</td>
<td></td>
</tr>
<tr>
<td>JP37</td>
<td>Open: X9 option</td>
<td>Optional setting for some X9 motherboards for PMbus accessing (to the base supported by the motherboard)</td>
</tr>
<tr>
<td></td>
<td>Closed: Default</td>
<td></td>
</tr>
<tr>
<td>JP70, JP71, JP72, JP73</td>
<td>For manufacturing purposes only</td>
<td>Upgrade connectors</td>
</tr>
</tbody>
</table>
2-3 Front LED Indicator

<table>
<thead>
<tr>
<th>LED</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heartbeat LED: D120</td>
<td>Blinking</td>
<td>Blinking heartbeat indicates backplane activity</td>
</tr>
</tbody>
</table>

Figure 2-4: Front LED
2-4 Rear Connectors and LED Indicators

<table>
<thead>
<tr>
<th>Rear Connector</th>
<th>Drive Number</th>
<th>Rear Connector</th>
<th>Drive Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS-#A0</td>
<td>SAS/SATA-A0</td>
<td>SAS-#C0</td>
<td>SAS/SATA-C0</td>
</tr>
<tr>
<td>SAS-#A1</td>
<td>SAS/SATA-A1</td>
<td>SAS-#C1</td>
<td>SAS/SATA-C1</td>
</tr>
<tr>
<td>SAS-#A2</td>
<td>SAS/SATA-A2</td>
<td>SAS-#C2</td>
<td>SAS/SATA-C2</td>
</tr>
<tr>
<td>SAS-#A3</td>
<td>SAS/SATA-A3</td>
<td>SAS-#C3</td>
<td>SAS/SATA-C3</td>
</tr>
<tr>
<td>SAS-#A4</td>
<td>SAS/SATA-A4</td>
<td>SAS-#C4</td>
<td>SAS/SATA-C4</td>
</tr>
<tr>
<td>SAS-#A5</td>
<td>SAS/SATA-A5</td>
<td>SAS-#C5</td>
<td>SAS/SATA-C5</td>
</tr>
<tr>
<td>SAS-#B0</td>
<td>SAS/SATA-B0</td>
<td>SAS-#D0</td>
<td>SAS/SATA-D0</td>
</tr>
<tr>
<td>SAS-#B1</td>
<td>SAS/SATA-B1</td>
<td>SAS-#D1</td>
<td>SAS/SATA-D1</td>
</tr>
<tr>
<td>SAS-#B3</td>
<td>SAS/SATA-B3</td>
<td>SAS-#D3</td>
<td>SAS/SATA-D3</td>
</tr>
<tr>
<td>SAS-#B4</td>
<td>SAS/SATA-B4</td>
<td>SAS-#D4</td>
<td>SAS/SATA-D4</td>
</tr>
<tr>
<td>SAS-#B5</td>
<td>SAS/SATA-B5</td>
<td>SAS-#D5</td>
<td>SAS/SATA-D5</td>
</tr>
</tbody>
</table>
## Rear LED Indicators

<table>
<thead>
<tr>
<th>Rear Connector</th>
<th>FAIL LED</th>
<th>ACT LED</th>
<th>Rear Connector</th>
<th>FAIL LED</th>
<th>ACT LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS-#A0</td>
<td>D2</td>
<td>D1</td>
<td>SAS-#C0</td>
<td>D26</td>
<td>D25</td>
</tr>
<tr>
<td>SAS-#A1</td>
<td>D4</td>
<td>D3</td>
<td>SAS-#C1</td>
<td>D28</td>
<td>D27</td>
</tr>
<tr>
<td>SAS-#A2</td>
<td>D6</td>
<td>D5</td>
<td>SAS-#C2</td>
<td>D30</td>
<td>D29</td>
</tr>
<tr>
<td>SAS-#A3</td>
<td>D8</td>
<td>D7</td>
<td>SAS-#C3</td>
<td>D32</td>
<td>D31</td>
</tr>
<tr>
<td>SAS-#A4</td>
<td>D10</td>
<td>D9</td>
<td>SAS-#C4</td>
<td>D34</td>
<td>D33</td>
</tr>
<tr>
<td>SAS-#A5</td>
<td>D12</td>
<td>D11</td>
<td>SAS-#C5</td>
<td>D36</td>
<td>D35</td>
</tr>
<tr>
<td>SAS-#B0</td>
<td>D14</td>
<td>D13</td>
<td>SAS-#D0</td>
<td>D38</td>
<td>D37</td>
</tr>
<tr>
<td>SAS-#B1</td>
<td>D16</td>
<td>D15</td>
<td>SAS-#D1</td>
<td>D40</td>
<td>D39</td>
</tr>
<tr>
<td>SAS-#B2</td>
<td>D18</td>
<td>D17</td>
<td>SAS-#D2</td>
<td>D42</td>
<td>D41</td>
</tr>
<tr>
<td>SAS-#B3</td>
<td>D20</td>
<td>D19</td>
<td>SAS-#D3</td>
<td>D44</td>
<td>D43</td>
</tr>
<tr>
<td>SAS-#B4</td>
<td>D22</td>
<td>D21</td>
<td>SAS-#D4</td>
<td>D46</td>
<td>D45</td>
</tr>
<tr>
<td>SAS-#B5</td>
<td>D24</td>
<td>D23</td>
<td>SAS-#D5</td>
<td>D48</td>
<td>D47</td>
</tr>
</tbody>
</table>
SAS Ports

The BPN-SAS-217HQ 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.

<table>
<thead>
<tr>
<th>Number of Motherboards</th>
<th>SAS Port Connectors</th>
<th>Connect to Motherboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using 1 MB</td>
<td>A0, A1, A2, A3, A4, A5</td>
<td>MB-A</td>
</tr>
<tr>
<td>Using 2 MBs</td>
<td>A0, A1, A2, A3, A4, A5, B0, B1, B2, B3, B4, B5</td>
<td>MB-A, MB-B</td>
</tr>
<tr>
<td>Using 3 MBs</td>
<td>A0, A1, A2, A3, A4, A5, B0, B1, B2, B3, B4, B5, C0, C1, C2, C3, C4, C5</td>
<td>MB-A, MB-B, MB-C</td>
</tr>
<tr>
<td>Using 4 MBs</td>
<td>A0, A1, A2, A3, A4, A5, B0, B1, B2, B3, B4, B5, C0, C1, C2, C3, C4, C5, D0, D1, D2, D3, D4, D5</td>
<td>MB-A, MB-B, MB-C, MB-D</td>
</tr>
</tbody>
</table>

Figure 2-6: Motherboard Locations In the Chassis
Notes
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and proceedings of any kind arising out of or related to such ultra-hazardous use or
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