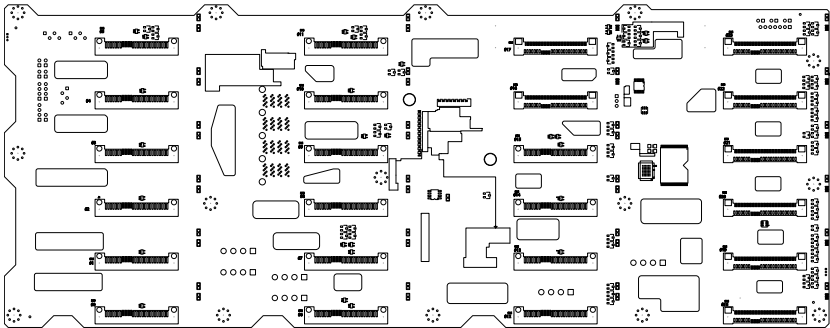




BPN-SAS3-846EL1-N8 Backplane



USER'S GUIDE

Revision 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)

Website: 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)

Website: www.supermicro.nl

Asia-Pacific

Address: Super Micro Computer, Inc.
3F, No. 150, Jian 1st Rd.
Zhonghe Dist., New Taipei City 235
Taiwan (R.O.C)

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3992

Email: support@supermicro.com.tw

Website: www.supermicro.com.tw

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

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 BPN-SAS3-846EL1-N8 series backplane.
- Make sure that the backplane is properly and securely on the motherboard to prevent damage to the system due to power outages.

1-3 An Important Note to Users

All images and layouts shown in this user's guide are based upon the latest backplane 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-SAS3-846EL1-N8 Backplane

The BPN-SAS3-846EL1-N8 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 website at www.supermicro.com for the latest updates, compatible parts and supported configurations.

Chapter 2

Connectors and LEDs

2-1 Connector Side Components

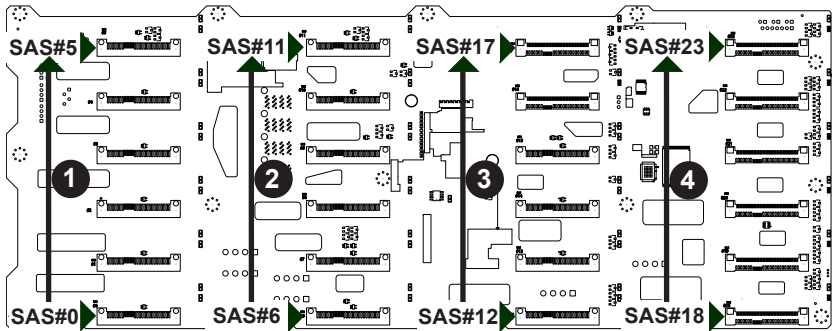


Figure 2-1. BPN-SAS3-846EL1-N8 Connector Side Components

1. HDD Connectors: SAS#0-5.
2. HDD Connectors: SAS#6-11.
3. HDD Connectors: SAS#12-17.
4. HDD Connectors: SAS#18-23.

2-2 Connector Side Component Definitions

#1. - 4. HDD Connectors

The HDD connectors are designated SAS#0 through SAS#23. These are for SAS3 and SATA3 drives. SAS#16 through SAS#23 also support NVMe drives.

2-3 Connector Side LED Indicators and SAS Connectors

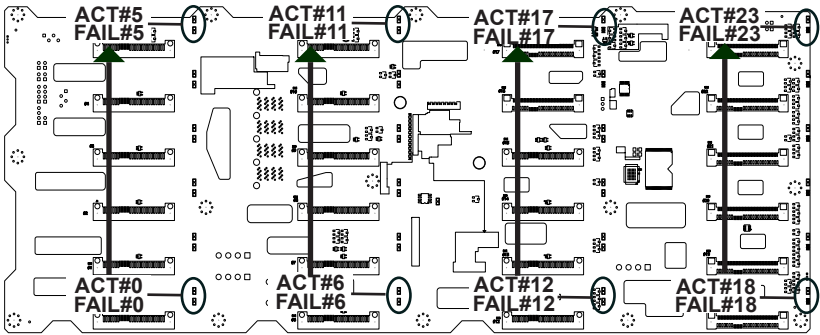


Figure 2-2. BPN-SAS3-846EL1-N8 Connector Side LEDs

Connector Side SAS Connectors			
SAS Connector	SAS Drive Number	SAS Connector	SAS Drive Number
SAS#0	SAS/SATA HDD #0	SAS#12	SAS/SATA HDD #12
SAS#1	SAS/SATA HDD #1	SAS#13	SAS/SATA HDD #13
SAS#2	SAS/SATA HDD #2	SAS#14	SAS/SATA HDD #14
SAS#3	SAS/SATA HDD #3	SAS#15	SAS/SATA HDD #15
SAS#4	SAS/SATA HDD #4	SAS#16	SAS/SATA/NVMe HDD #16
SAS#5	SAS/SATA HDD #5	SAS#17	SAS/SATA/NVMe HDD #17
SAS#6	SAS/SATA HDD #6	SAS#18	SAS/SATA/NVMe HDD #18
SAS#7	SAS/SATA HDD #7	SAS#19	SAS/SATA/NVMe HDD #19
SAS#8	SAS/SATA HDD #8	SAS#20	SAS/SATA/NVMe HDD #20
SAS#9	SAS/SATA HDD #9	SAS#21	SAS/SATA/NVMe HDD #21
SAS#10	SAS/SATA HDD #10	SAS#22	SAS/SATA/NVMe HDD #22
SAS#11	SAS/SATA HDD #11	SAS#23	SAS/SATA/NVMe HDD #23

Connector Side LED Indicators					
SAS Connector	Hard Drive Activity LED	Failure LED	SAS Connector	Hard Drive Activity LED	Failure LED
SAS#0	ACT#0	FAIL#0	SAS#12	ACT#12	FAIL#12
SAS#1	ACT#1	FAIL#1	SAS#13	ACT#13	FAIL#13
SAS#2	ACT#2	FAIL#2	SAS#14	ACT#14	FAIL#14
SAS#3	ACT#3	FAIL#3	SAS#15	ACT#15	FAIL#15
SAS#4	ACT#4	FAIL#4	SAS#16	ACT#16	FAIL#16
SAS#5	ACT#5	FAIL#5	SAS#17	ACT#17	FAIL#17
SAS#6	ACT#6	FAIL#6	SAS#18	ACT#18	FAIL#18
SAS#7	ACT#7	FAIL#7	SAS#19	ACT#19	FAIL#19
SAS#8	ACT#8	FAIL#8	SAS#20	ACT#20	FAIL#20
SAS#9	ACT#9	FAIL#9	SAS#21	ACT#21	FAIL#21
SAS#10	ACT#10	FAIL#10	SAS#22	ACT#22	FAIL#22
SAS#11	ACT#11	FAIL#11	SAS#23	ACT#23	FAIL#23

2-3 Jumper Locations and Pin Definitions

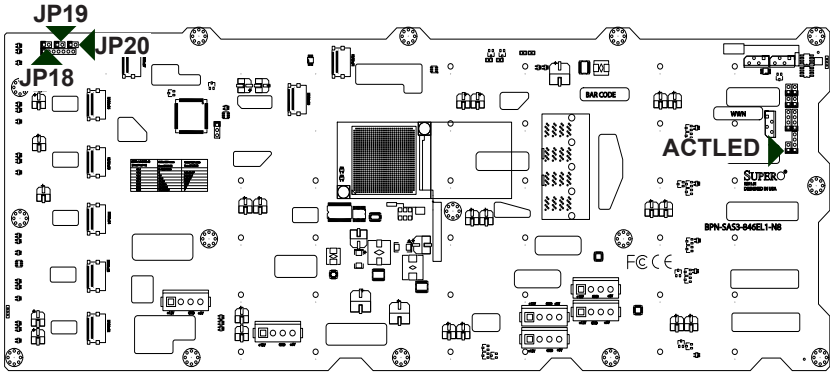
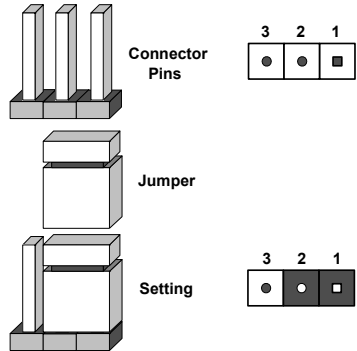


Figure 2-2. Front Jumpers

Explanation of Jumpers

To modify the operation of the back-plane, 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.



Jumper Settings			
JP18	JP19	JP20	Description
open	open	open	Drives #16-23 connected to CPU0 PCIe. (default)
closed	open	open	Drive #16 connected to CPU0 PCIe, drives #17-23 connected to CPU1 PCIe.
open	closed	open	Drives #16-17 connected to CPU0 PCIe, drives #18-23 connected to CPU1 PCIe.
closed	closed	open	Drives #16-18 connected to CPU0 PCIe, drives #19-23 connected to CPU1 PCIe.
open	open	closed	Drives #16-19 connected to CPU0 PCIe, drives #20-23 connected to CPU1 PCIe.
closed	open	closed	Drives #16-20 connected to CPU0 PCIe, drives #21-23 connected to CPU1 PCIe.
open	closed	closed	Drives #16-21 connected to CPU0 PCIe, drives #22-23 connected to CPU1 PCIe.
closed	closed	closed	Drives #16-22 connected to CPU0 PCIe, drive #23 connected to CPU1 PCIe.

LED Test	
ACTLED	Description
Open	For internal use only. (default)

2-4 Expander Chip Side Components

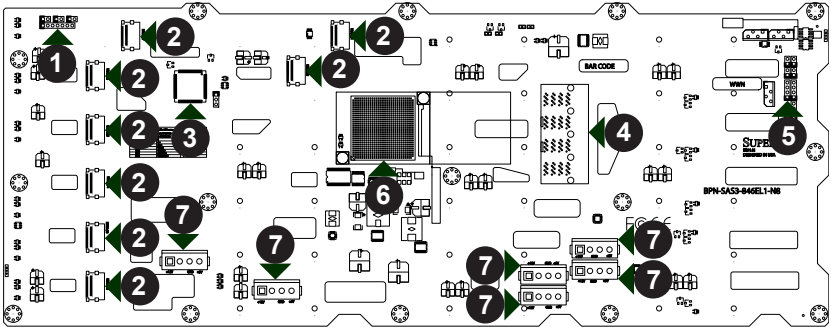


Figure 2-3. BPN-SAS3-846EL1-N8 Expander Chip Side Components

- | | |
|---|---|
| 1. JTAG Connector (7-pin): J29,
CPLD Upgrade Port. | 6. LSI SAS3X40 Gen3 SAS Ex-
pander. |
| 2. NVMe Connectors #0-7: JSM1-8. | 7. Power Connectors (4-pin):
PWR1-6. |
| 3. Chip: CPLD. | |
| 4. MiniSAS HD Integrated Connec-
tor: JSM50. | |
| 5. Expander Programming Port (4-
pin): J31. | |

2-5 Expander Chip Side Component Definitions

#1. CPLD Upgrade Port

The CPLD programming port, designated J29, is used only by the manufacturer to upgrade the CPLD.

#2. NVMe Connectors

The NVMe ports, designated NVMe#0-7, are for NVMe drives at SAS#16-23 (see section 2-1 for drive locations) and used to connect the NVMe drive cables. To configure the first four NVMe drives, two CBL-SAST-0848 OCuLink cables should be used to connect ports NVMe#0-1 and two CBL-SAST-0819 OCuLink cables should be used to connect ports NVMe#2-3 to an AOC-SLG3-4E4T, on port 2 of RSC-S4-A6688 on motherboard X11QPH+. To configure the remaining four NVMe drives, four CBL-SAST-0819 OCuLink cables should be used to connect ports NVMe#4-7 to a second AOC-SLG3-4E4T, on port 4 of RSC-S4-A6688 on motherboard X11QPH+.

#3. CPLD Chip

The CPLD is an enclosure management chip that supports the SGPIO and LED management.

#4. MiniSAS HD Integrated Connector

The SAS port is used to connect the SAS or SATA drive cable CBL-SAST-0531 to an AOC-S3108L-H8IR HBA card installed on RSC-S4R-A66888 on motherboard X11QPH+. The port is designated JSM50, for SAS3 or SATA3 drives at SAS#0-23 (see section 2-1 for drive locations). The port is also compatible with SATA drives. However, mixing SAS and SATA drives in the same enclosure is not recommended.

#5. Expander Programming Port

The primary UART connector is designated J52 and is for the manufacturer's use only.

#6. Expander Chip

This chip allows connectivity to the components on the backplane.

#7. Backplane Main Power Connectors

The 4-pin connectors, designated PWR1, PWR2, PWR3, PWR4, PWR5, and PWR6, 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

Disclaimer (cont.)

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