

BPN-SAS3-842TQ Backplane

USER'S GUIDE

Rev. 1.0

The information in this User's Manual has been carefully reviewed and is believed to be accurate. The vendor assumes no responsibility for any inaccuracies that may be contained in this document, and makes no commitment to update or to keep current the information in this manual, or to notify any person or organization of the updates. **Please Note: For the most up-to-date version of this manual, please see our website at www.supernmicro.com.**

Super Micro Computer, Inc. ("Supernmicro") reserves the right to make changes to the product described in this manual at any time and without notice. This product, including software and documentation, is the property of Supernmicro and/or its licensors, and is supplied only under a license. Any use or reproduction of this product is not allowed, except as expressly permitted by the terms of said license.

IN NO EVENT WILL Super Micro Computer, Inc. BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, SPECULATIVE, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT OR DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN PARTICULAR, SUPER MICRO COMPUTER, INC. SHALL NOT HAVE LIABILITY FOR ANY HARDWARE, SOFTWARE, OR DATA STORED OR USED WITH THE PRODUCT, INCLUDING THE COSTS OF REPAIRING, REPLACING, INTEGRATING, INSTALLING, OR RECOVERING SUCH HARDWARE, SOFTWARE, OR DATA.

Any disputes arising between manufacturer and customer shall be governed by the laws of Santa Clara County in the State of California, USA. The State of California, County of Santa Clara shall be the exclusive venue for the resolution of any such disputes. Supernmicro's total liability for all claims will not exceed the price paid for the hardware product.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case you will be required to correct the interference at your own expense.

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".



WARNING: This product can expose you to chemicals including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

The products sold by Supernmicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices, or other critical systems whose failure to perform would be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supernmicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend, and hold Supernmicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale. Manual Revision 1.0

Release Date: February 28, 2019

Unless you request and receive written permission from Super Micro Computer, Inc., you may not copy any part of this document. Information in this document is subject to change without notice. Other products and companies referred to herein are trademarks or registered trademarks of their respective companies or mark holders.

Copyright © 2019 by Super Micro Computer, Inc.
All rights reserved.

Printed in the United States of America

Table of Contents

Contacting Supermicro.....	iv
Returning Merchandise for Service.....	v
Chapter 1 Safety Guidelines	1-1
1-1 ESD Safety Guidelines	1-1
1-2 General Safety Guidelines	1-1
1-3 An Important Note to Users	1-2
1-4 Introduction to the BPN-SAS3-842TQ Backplane	1-2
Chapter 2 Connectors and Pin Definitions.....	2-1
2-1 Front Connectors	2-1
2-2 Front Connector Pin Definitions.....	2-2
2-3 Front Jumper Locations and Pin Definitions.....	2-3
2-4 Rear Connectors and LED Indicators	2-4

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-SAS3-842TQ Backplane

The BPN-SAS3-842TQ 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

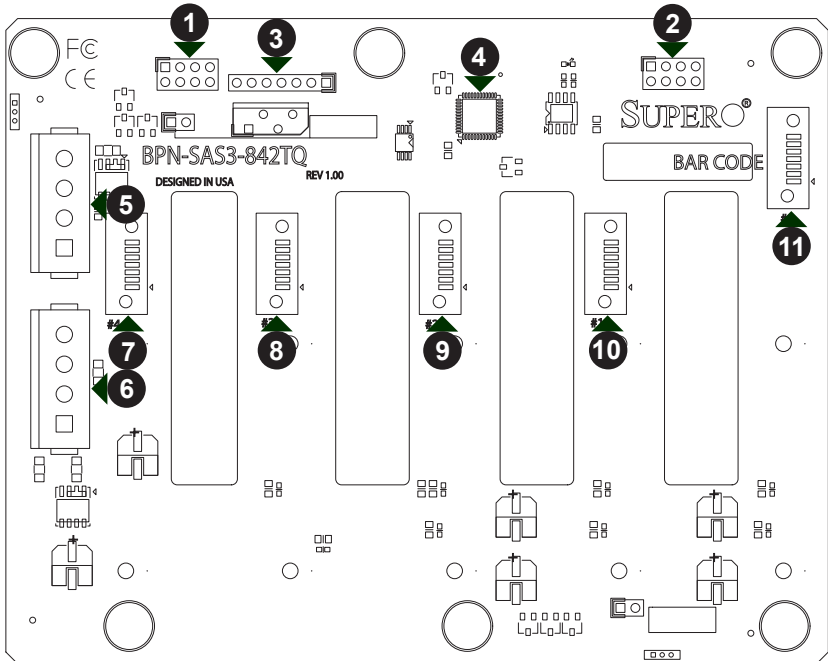


Figure 2-1. Front Connectors

- | | |
|--|--|
| 1. Sideband Connector #2 (8-pin):
SGPIO, JP6 | 6. Power Connector (4-pin) #2:
JPW2 |
| 2. Sideband Connector #1 (8-pin):
SGPIO, JP1 | 7. SAS/SATA Port #4: J10 |
| 3. JTAG Connector (7-pin): J11,
CPLD Upgrade Port | 8. SAS/SATA Port #3: J9 |
| 4. Chip: CPLD | 9. SAS/SATA Port #2: J8 |
| 5. Power Connector (4-pin) #1:
JPW1 | 10. SAS/SATA Port #1: J7 |
| | 11. SAS/SATA Port #0: J6 |

2-2 Front Connector Pin Definitions

#1 - 2. Sideband Connectors

These are the SGPIO sideband connectors for SAS/SATA. SGPIO Sideband #1, designated J1, is for SAS/SATA Ports #0-3 and SGPIO Sideband #2, designated J6, is for SAS/SATA Port #4.

Sideband Connectors (Sideband#1 and Sideband#2)			
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. CPLD Upgrade Port

The CPLD programming port, designated J11, is used only by the manufacturer to upgrade the CPLD.

#4. CPLD Chip

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

#5 - 6. Backplane Main Power Connectors

The 4-pin connectors, designated JPW1 and JPW2, 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

#7 - 11. MiniSAS 7-Pin Connectors

The SAS ports are used to connect the SAS drive cables. The five ports are designated J6, J7, J8, J9, and J10. Each port is also compatible with SATA drives. However, mixing SAS and SATA drives in the same enclosure is not recommended.

2-3 Front Jumper Locations and Pin Definitions

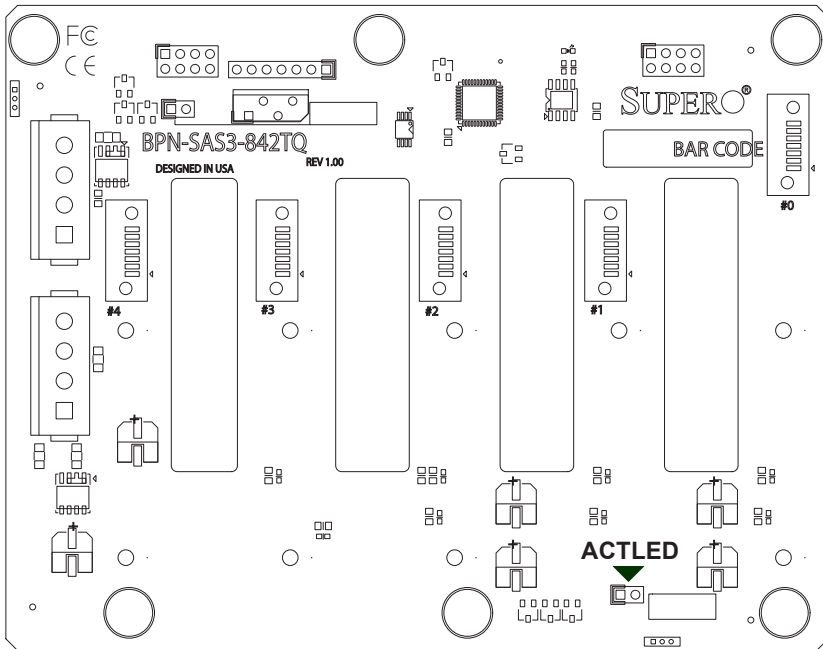
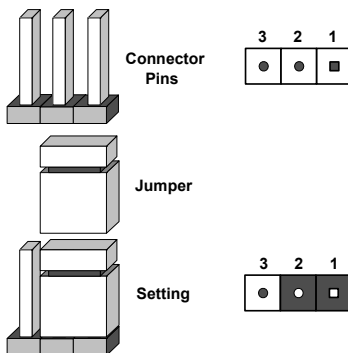


Figure 2-2. Front Jumpers

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.



Jumper Settings		
Jumper	Jumper Settings	Note
ACTLED	Open: Default	This is used for internal testing only.

2-4 Rear Connectors and LED Indicators

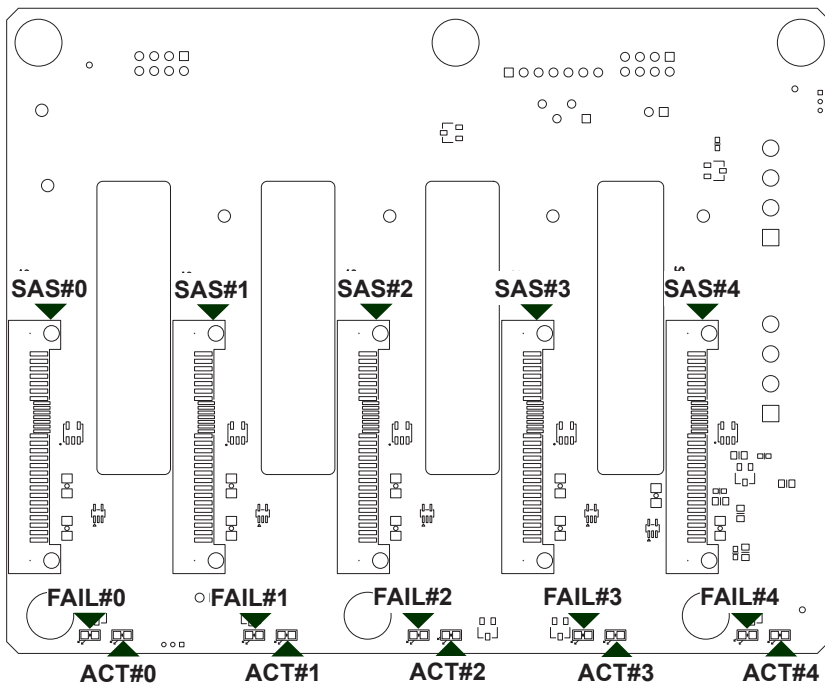


Figure 2-3. Rear Connectors

Rear SAS3/SATA Connectors	
Rear Connector	SAS3 Drive Number
SAS #0	SAS3/SATA HDD #0
SAS #1	SAS3/SATA HDD #1
SAS #2	SAS3/SATA HDD #2
SAS #3	SAS3/SATA HDD #3
SAS #4	SAS3/SATA HDD #4

Rear LED Indicators		
Rear LED	Hard Drive Activity	Failure LED
SAS #0	ACT #0	FAIL #0
SAS #1	ACT #1	FAIL #1
SAS #2	ACT #2	FAIL #2
SAS #3	ACT #3	FAIL #3
SAS #4	ACT #4	FAIL #4

Notes

Disclaimer (cont.)

The products sold by Supermicro are not intended for and will not be used in life support systems, medical equipment, nuclear facilities or systems, aircraft, aircraft devices, aircraft/emergency communication devices, or other critical systems whose failure to perform would be reasonably expected to result in significant injury or loss of life or catastrophic property damage. Accordingly, Supermicro disclaims any and all liability, and should buyer use or sell such products for use in such ultra-hazardous applications, it does so entirely at its own risk. Furthermore, buyer agrees to fully indemnify, defend, and hold Supermicro harmless for and against any and all claims, demands, actions, litigation, and proceedings of any kind arising out of or related to such ultra-hazardous use or sale.