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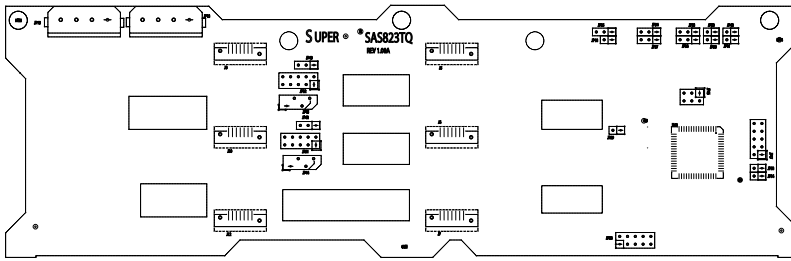

BPN-SAS-823T and BPN-SAS-823TQ Backplane

USER'S GUIDE

Rev. 1.0b

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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 1.0b
Release Date: December 21, 2012

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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.

Notes

Chapter 1

BPN-SAS-823T and BPN-SAS-823TQ 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 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-823T/TQ backplane.
- Disconnect the power cable before installing or removing any cables from the BPN-SAS-823T/TQ backplane.
- Make sure that the BPN-SAS-823T/TQ 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 BPN-SAS-823T/BPN-SAS-823TQ Backplanes

The BPN-SAS-823T and BPN-SAS-823TQ backplanes have been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

The BPN-SAS-823T backplane is identical to the BPN-SAS-823TQ backplane except that the I^2C connectors, sideband headers and the MG9072 chip are not populated on the SAS823T backplane.

This manual reflects BPN-SAS-823T and BPN-SAS-823TQ Revision 1.00A, 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.

Chapter 2

Connectors, Jumpers and Pin Definitions

2-1 Front Connectors

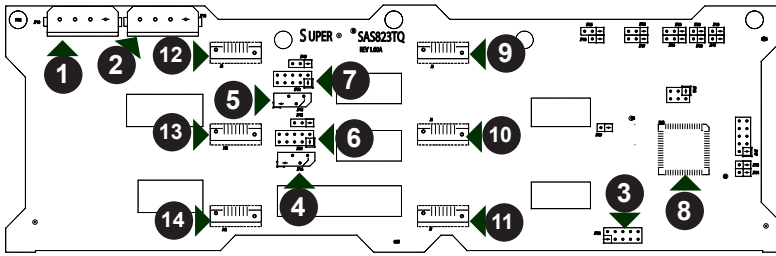


Figure 2-1: Front Connectors

BPN-SAS-823TQ Front Connectors:

1. JP10: 4-Pin Power Connector
2. JP13: 4-Pin Power Connector
3. JP26: ACT_IN (Activity In LED Header)
4. JP44: I²C Connector#1
5. JP45: I²C Connector#2
6. JP51: SideBand #1
7. JP52: SideBand #2
8. MG 9072 Chip
9. SAS Port #0
10. SAS Port #1
11. SAS Port #2
12. SAS Port #3
13. SAS Port #4
14. SAS Port #5

BPN-SAS-823T Front Connectors:

1. P10: 4-Pin PWR Connector
2. JP13: 4-Pin PWR Connector
3. JP26: ACT_IN (Activity In LED Header)
9. SAS Port #0
10. SAS Port #1
11. SAS Port #2
12. SAS Port #3
13. SAS Port #4
14. SAS Port #5

1. - 2. Backplane Power Connectors

These 4-pin connectors, designated JP10 and JP13 supply power to the backplane.

3. Activity LED Header

The activity LED header, designated JP26, is used to indicate the activity status of each SATA drive. The Activity LED Header is located on the rear of the backplane. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SATA Activity LED Header Pin Definitions

Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

4. - 5. I²C Connectors (BPN-SAS-823TQ Only)

The I²C Connectors, designated JP44 and JP45, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I²C Connector Pin Definitions

Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

6. - 7. Sideband Headers (BPN-SAS-823TQ Only)

The sideband headers are designated JP51 and JP52.

For SES-2 to work properly, you must connect an 8-pin sideband cable to JP51 and JP52. See the table to the right for pin definitions.

Sideband Headers

Pin #	Definition	Pin #	Definition
2	Backplane Addressing (SB5)	1	Controller ID (SB6)
4	Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SDA (SB1)
8	Backplane ID (SB7)	7	SCL (SB0)
10	No Connection	9	No Connection

8. MG9072 Chip (SC823TQ Only)

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

9. - 14. SAS Ports

The SAS/SATA ports are used to connect the SAS/SATA drive cables. The six ports are designated #0 - #5.

2-2 Front Jumpers and Pin Definitions

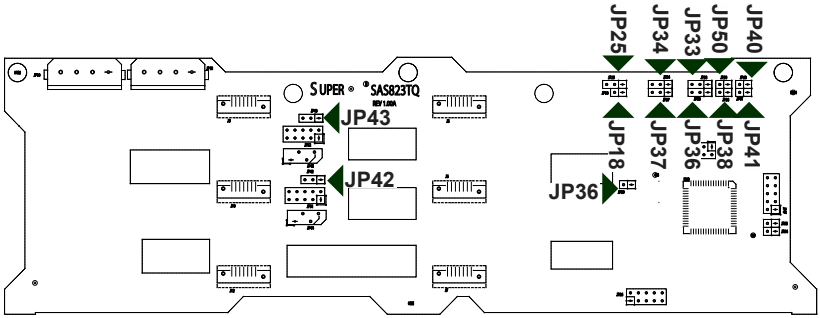
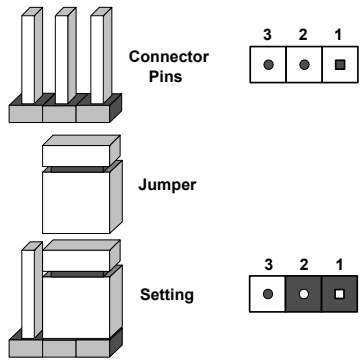


Figure 2-3: Front Jumpers (BPN-SAS-823TQ)

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.



I²C and SGPIO Modes and Jumper Settings

The BPN-SAS-823TQ backplane can utilize I²C or SGPIO. I²C is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I²C mode.

I²C Mode (Default)		
Jumper	**Jumper Setting**	**Note**
JP18	Open	Closed: Buzzer Reset (Default)
JP29	Open	Closed: Chip Reset (Default)
JP33	Pins 2-3	Controller ID #1
JP34	Pins 1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	Pins 2-3	Controller ID #2
JP37	Pins 2-3	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Closed	I²C Reset #2
JP40	Open	I²C Reset _SDOUT#1
JP41	Open	I²C Reset _SDOUT#2
JP42	Pins 2-3	I²C Backplane ID _SDIN#1
JP43	Pins 2-3	I²C Backplane ID _SDIN#2
JP50	Closed	I²C Reset #1

SGPIO Mode (Only)		
Jumper	**Jumper Setting**	**Note**
JP18	Open	Closed: Buzzer Reset (Default)
JP29	Open	Closed: MG9072 Reset (Default)
JP33	Pins 1-2	Controller ID #1
JP34	Pins 1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	Pins 1-2	Controller ID #2
JP37	Pins 1-2	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Open	I²C Reset #2
JP40	Closed	I²C Reset _SDOUT#1
JP41	Closed	I²C Reset _SDOUT#2
JP42	Pins 1-2	I²C Backplane ID _SDIN#1
JP43	Pins 1-2	I²C Backplane ID _SDIN#2
JP50	Open	I²C Reset #1

SAS Port Connections in I²C and SGPIO Modes

Remember the following when connecting this backplane:

- In I²C mode, I²C #1 (JP44) corresponds with SAS ports #0, #1, #2, and #3. I²C #2 (JP45) corresponds with SAS ports 4 and 5. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

- In SGPIO mode, Sideband #1 (JP51) corresponds with SAS ports 0, 1, 2, and 3. Sideband #2 (JP52) corresponds with SAS ports #4 and #5. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

Jumper Settings (SAS-823T Only)

Jumper Settings for SAS-823T		
Jumper	Settings	Description
JP18	Open/Closed	Closed: Buzzer reset (default)
JP25	Open Pins 1-2 Pins 2-3	Overheat temperature settings: Buzzer activates at 45° C Buzzer activates at 50° C Buzzer activates at 55° C

2-4 Rear Connectors and LED Indicators

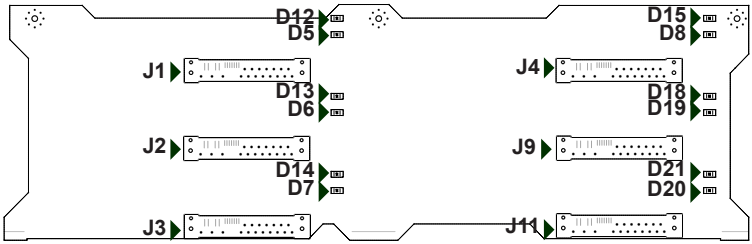


Figure 2-5: Rear Connectors and LEDs

BPN-SAS-823T and BPN-SAS-823TQ Rear SAS Connectors	
Connector	**SAS Drive Number (Connected to HDD)**
J1	SAS#0 HDD
J2	SAS#1 HDD
J3	SAS#2 HDD
J4	SAS#3 HDD
J9	SAS#4 HDD
J11	SAS#5 HDD

BPN-SAS-823TQ Rear LED Indicators (Connected to HDD)	
LED	**Hard Drive Activity and Failure LEDs**
D12	SAS#0 Activity LED
D13	SAS#1 Activity LED
D14	SAS#2 Activity LED
D15	SAS#3 Activity LED
D18	SAS#4 Activity LED
D21	SAS#5 Activity LED
D5	SAS#0 Failure LED
D6	SAS#1 Failure LED
D7	SAS#2 Failure LED
D8	SAS#3 Failure LED
D19	SAS#4 Failure LED
D20	SAS#5 Failure LED

BPN-SAS-823T Rear LED Indicators (Connected to HDD)	
LED	**Hard Drive Activity and Failure LEDs**
D12	SAS#0 Activity LED
D13	SAS#1 Activity LED
D14	SAS#2 Activity LED
D15	SAS#3 Activity LED
D18	SAS#4 Activity LED
D21	SAS#5 Activity LED

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