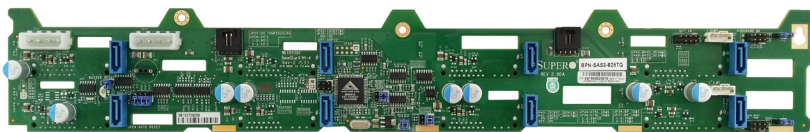# BPN-SAS3-825TQ BACKPLANE

USER'S GUIDE

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.

Secure Data Deletion

A secure data deletion tool designed to fully erase all data from storage devices can be found on our website: https://www.supermicro.com/about/policies/disclaimer.cfm?url=/wftp/utility/Lot9_Secure_Data_Deletion_Utility/

Notes

Chapter 1

Guidelines

This chapter offers guidelines for personal and equipment safety, and notes about the BPN-SAS3-825TQ 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-SAS3-825TQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects PCB Revision 2.00A, 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 describes the BPN-SAS3-825TQ backplane, which supports SAS3 and SATA3 drives.

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.
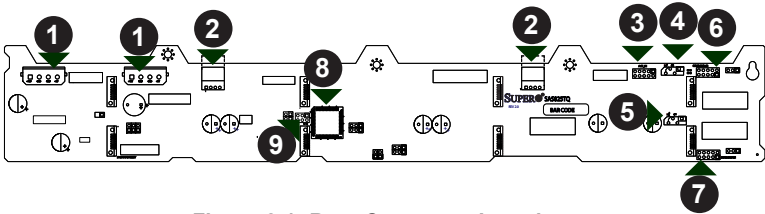

Figure 2-1. Rear Connector Locations

1. Power connectors: JP10, JP13

2. CD/floppy drive power connectors: J17. J18

3. Activity LED header: JP26

4. I^{2}C connector #2: JP45

5. I^{2}C connector #1: JP44

6. Sideband connector #2: JP52

7. Sideband connector #1: JP51

8. MG9072 chip: U40

9. Upgrade header: JP46
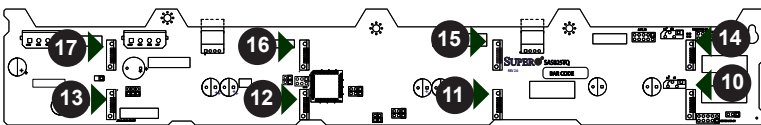
Figure 2-2. Rear SAS/SATA Connectors

10. Cable connector #0: J5

11. Cable connector #1: J6

12. Cable connector #2: J7

13. Cable connector #3: J8

14. Cable connector #4: J10

15. Cable connector #5: J12

16. Cable connector #6: J14

17. Cable connector #7: J16

2-2   Rear Connector Definitions

1. Backplane Main Power Connectors

The 4-pin connectors, designated JP10 and JP13, provide power to the backplane.

Main Power 4-Pin Connector	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

2. CD/Floppy Drive Pin Connectors

Pin connectors, designated J17 and J18, provide power to the CD and floppy drives. See the table on the right for pin definitions.

CD/FDD Power 4-Pin Connector	
Pin#	Definition
1	+5V
2 and 3	Ground
4	+12V

3. Activity LED Headers

The activity LED header, designated JP26, is used to indicate the activity status of each SAS drive. The activity LED header is located on the front panel. For the activity lead header to work properly, connect to it using a 10-pin LED cable. This is only used when the activity LED is not supported by the hard drive.

SAS 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

The I²C connectors, designated JP44 and JP45, are used to monitor the HDD activity and status.

I²C Connector Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

6, 7. Sideband Headers

The sideband headers are designated JP51 and JP52. For SES-2 to work properly, you must connect an 8-pin sideband cable.

Sideband Headers			
Pin #	Definition	Pin #	Definition
2	SGPIO: SDIN; I²C: Backplane Addressing	1	Controller ID (SB6)
4	SGPIO: SDOUT; I²C: Reset	3	GND (SB2)
6	GND (SB3)	5	SGPIO: SLOAD; I²C: SDA
8	Backplane ID (SB7)	7	SGPIO: SCLOCK; 1²C: SCL
10	No Connection	9	No Connection

8. MG9072 Chip

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

9. Upgrade Header

The upgrade header is designated JP46 and is used for manufacturing purposes only.

10-17. SAS3 Ports

Connect these ports with the SAS drive cables. The eight ports are designated #0 - #7. Each SAS port is compatible with SATA drives.

SAS3 Connectors		
Connector	Label	Port
J5	#0	SAS#0
J6	#1	SAS#1
J7	#2	SAS#2
J8	#3	SAS#3
J10	#4	SAS#4
J12	#5	SAS#5
J14	#6	SAS#6
J16	#7	SAS#7

2-3   Rear Jumpers
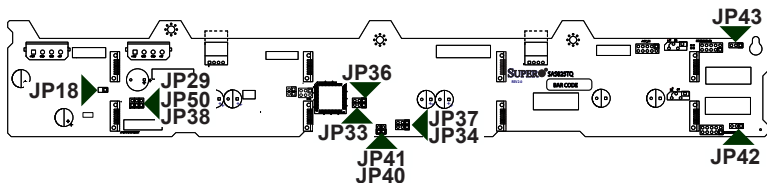
Figure 2-3. Jumpers

Jumper Settings		
Jumper	**Jumper Settings**	**Note**
JP29	Open (Jumper off the pins): Default Closed (Jumper on the pins): Reset	MG9072 chip reset
JP18	Not used	

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.
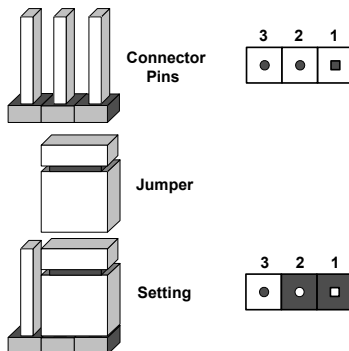
SGPIO and I²C Modes and Jumper Settings

This backplane can utilize SGPIO or I²C. SGPIO is the default mode and can be used without making changes to your jumpers. The following tables describe jumper settings for each mode.

SGPIO Settings (Default)		
Jumper	**Jumper Setting**	**Notes**
JP33	1-2	Controller ID #1
JP34	1-2	Backplane ID #1 1-2: ID#0
JP36	1-2	Controller ID #2
JP37	1-2	Backplane ID #2 1-2: ID#0
JP38	Open (Jumper off the pins)	I²C Reset #2
JP40	Closed (Jumper on the pins)	I²C Reset_SDOUT#1
JP41	Closed (Jumper on the pins)	I²C Reset_SDOUT#2
JP42	1-2	I²C Backplane ID_SDIN#1
JP43	1-2	I²C Backplane ID_SDIN#2
JP50	Open (Jumper off the pins)	I²C Reset #1

| I²C Settings		
Jumper	**Jumper Setting**	**Notes**
JP33	2-3	Controller ID #1
JP34	1-2	Backplane ID #1 1-2: ID#0 2-3: ID#1
JP36	2-3	Controller ID #2
JP37	2-3	Backplane ID #2 1-2: ID#0 2-3: ID#1
JP38	Closed (Jumper on the pins)	I²C Reset #2
JP40	Open (Jumper off the pins)	I²C Reset_SDOUT#1
JP41	Open (Jumper off the pins)	I²C Reset_SDOUT#2
JP42	2-3	I²C Backplane ID_SDIN#1
JP43	2-3	I²C Backplane ID_SDIN#2
JP50	Closed (Jumper on the pins)	I²C Reset #1

2-4   Rear LED Indicators

D3
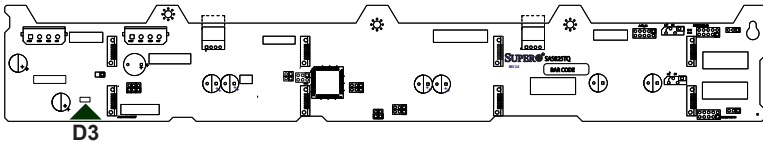
Figure 2-4. Front LED

LEDs		
LED	**State**	**Specification**
D3	Red light flashing	Overheat/drive failure LED indicator

2-5   Front Connectors and LED Indicators

The side of the backplane facing the front of the chassis provides connectors for eight SAS3 drives, and LEDs showing activity or failure..
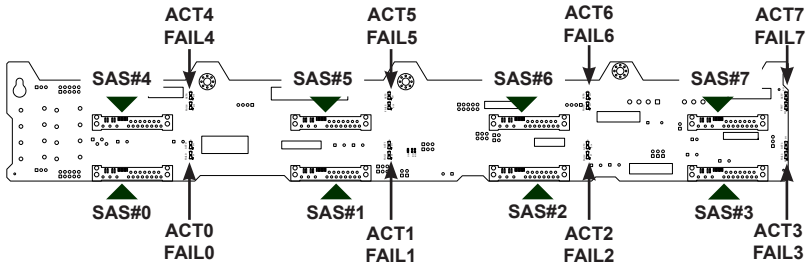

Figure 2-3. Front Connectors and LEDs

Front SAS/SATA Connectors and LED Indicators			
Drive Number	Label	HDD Activity LED (green)	Failure LED (red)
SAS #0	J1	ACT0	FAIL0
SAS #1	J2	ACT1	FAIL1
SAS #2	J3	ACT2	FAIL2
SAS #3	J4	ACT3	FAIL3
SAS #4	J9	ACT4	FAIL4
SAS #5	J11	ACT5	FAIL5
SAS #6	J13	ACT6	FAIL6
SAS #7	J15	ACT7	FAIL7

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