

SAS 846 TQ BACKPLANE

USER'S GUIDE

Rev. 1.0b

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Table of Contents

SAS 846 TQ BACKPLANE

Contacting SuperMicro.....iv

Chapter 1 Safety Guidelines

1-1 ESD Safety Guidelines 1-1

1-2 General Safety Guidelines 1-1

1-3 A Note to Users..... 1-2

Chapter 2 Jumper Settings and Pin Definitions

2-1 Front Connectors and Jumpers 2-1

 Front Connectors 2-1

2-2 Front Connector and Pin Definitions..... 2-3

2-3 Front Jumper Locations and Pin Definitions..... 2-5

 Explanation of Jumpers..... 2-5

 Fan Jumper Settings..... 2-6

 I²C and SGPIO Modes and Jumper Settings 2-7

 Front LED Indicators 2-8

 Front Panel LEDs..... 2-8

2-4 Rear Connectors and LED Indicators 2-9

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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

Electric Static 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 RAID card 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.

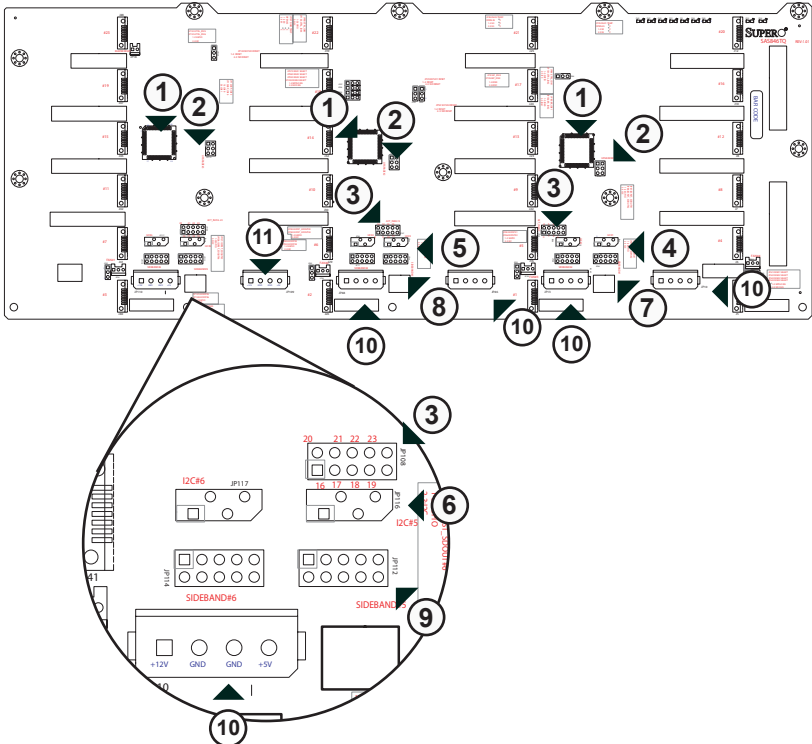
1-3 A Note to Users

- 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.

Chapter 2

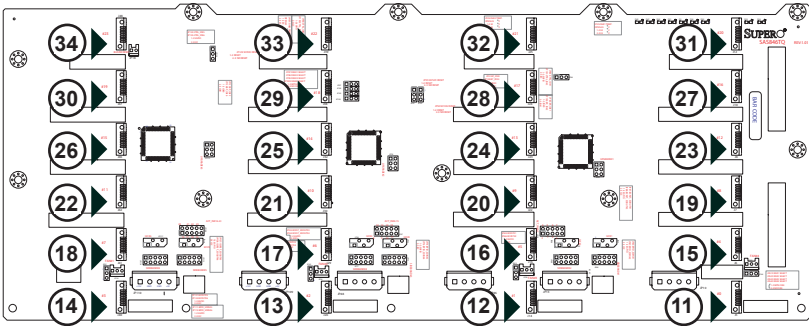
Jumper Settings and Pin Definitions

2-1 Front Connectors and Jumpers



Front Connectors

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Chip: MG 9072 2. Upgrade Connectors: JP69, JP78 and JP115 3. ACT_IN: JP26, JP47, and JP108 4. I²C Connector #1 (JP37) and #2 (JP95) 5. I²C Connector #3 (JP52) and #4 (JP96) 6. I²C Connector #5 (JP116) and #6 (JP117) | <ol style="list-style-type: none"> 7. SideBand Connector #1 (JP66) and #2 (JP68) 8. SideBand Connector #3 (JP75) and #4 (JP77) 9. SideBand Connector #5 (JP112) and #6 (JP114) 10. Power Connectors (4-pin): JP10, JP13, JP46, JP48, JP109, and JP110 |
|--|---|



- 11. SAS Port #0 J5
- 12. SAS Port #1 J14
- 13. SAS Port #2 J26
- 14. SAS Port #3 J40
- 15. SAS Port #4 J6
- 16. SAS Port #5 J16
- 17. SAS Port #6 J29
- 18. SAS Port #7 J41
- 19. SAS Port #8 J7
- 20. SAS Port #9 J22
- 21. SAS Port #10 J30
- 22. SAS Port #11 J42
- 23. SAS Port #12 J8
- 24. SAS Port #13 J23
- 25. SAS Port #14 J32
- 26. SAS Port #15 J46
- 27. SAS Port #16 J10
- 28. SAS Port #17 J24
- 29. SAS Port #18 J38
- 30. SAS Port #19 J47
- 31. SAS Port #20 J12
- 32. SAS Port #21 J25
- 33. SAS Port #22 J39
- 34. SAS Port #23 J48

2-2 Front Connector and Pin Definitions

1. MG9072 Chip

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

2. Upgrade Connectors

The upgrade connectors are designated JP69, JP78, and JP115 and are used for manufacturer's diagnostic purposes only.

3. Activity LED Header

The activity LED header, designated JP26, JP47 and JP108, is used to indicate the activity status of each SAS drive. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

4./5./6. I²C Connectors

The I²C Connectors, designated JP37, JP95, JP52, JP96, JP116, and JP117, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I ² C Connector Pin Definitions (JP37, JP95, JP52, JP96, JP116, and JP117)	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

7./8./9./ Sideband Headers

The sideband headers are designated JP66, JP68, JP75, JP77, JP112, and JP114. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

NOTE: SGPIO is the default setting for this backplane.

Sideband Headers (JP66, JP68, JP75, JP77, JP112 and JP114)			
Pin #	Definition	Pin #	Definition
2	SGPIO: SDIN I²C: Backplane Addressing (SB5)	1	Controller ID (SB6)
4	SGPIO: SDOUT I²C: Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SGPIO: SLOAD I²C: SDA (SB1)
8	Backplane ID (SB7)	7	SGPIO: SCLOCK I²C: SCL (SB0)
10	No Conne- ction	9	No Connection

10. Backplane Main Power Connectors

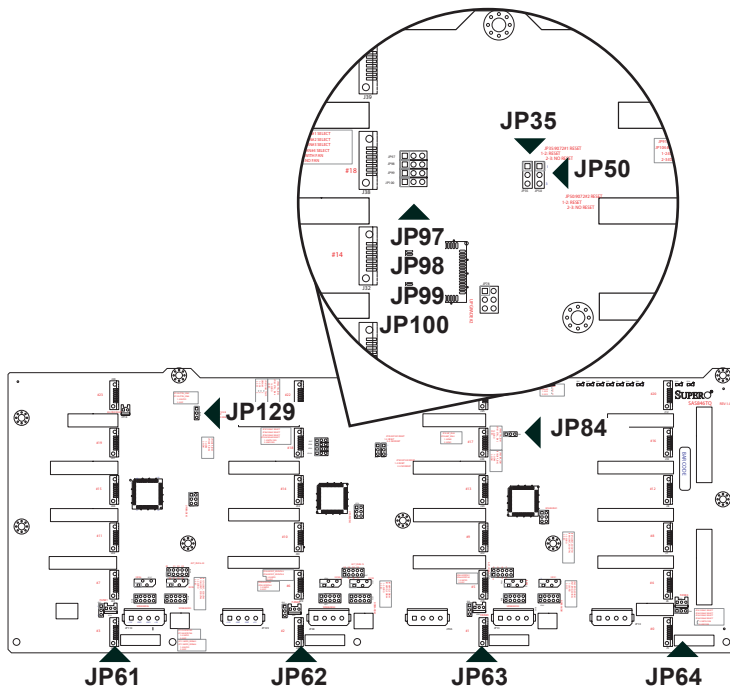
The 4-pin connectors, designated JP10, JP13, JP46, JP48, JP109, and JP110, provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector (JP10, JP13, JP46, and JP48)	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

11 - 34. SAS Ports

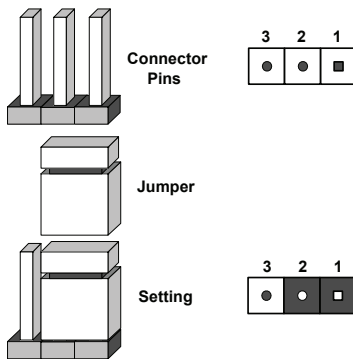
The SAS ports are used to connect the SAS drive cables. The 24 ports are designated #0 - #23. Each port is also compatible with SATA drives.

2-3 Front Jumper Locations and Pin Definitions



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
JP35	1-2: Reset 2-3: Default	MG 9072 Chip Reset #1
JP50	1-2: Reset 2-3: Default	MG 9072 Chip Reset #2
JP129	1-2: Reset 2-3: Default	MG 9072 Chip Reset #3

Fan Jumper Settings

This backplane can use up to four fans. To utilize each fan, you must configure **both jumpers** as instructed below.

Fan Jumper Settings		
Jumper	Jumper Settings	Note
JP61	1-2:With Fan (Default) 2-3:No Fan	FAN#1
JP97	1-2:With Fan (Default) 2-3:No Fan	FAN#1
JP62	1-2:With Fan (Default) 2-3:No Fan	FAN#2
JP98	1-2:With Fan (Default) 2-3:No Fan	FAN#2
JP63	1-2:With Fan (Default) 2-3:No Fan	FAN#3
JP99	1-2:With Fan (Default) 2-3:No Fan	FAN#3
JP64	1-2:With Fan (Default) 2-3:No Fan	FAN#4
JP100	1-2:With Fan (Default) 2-3:No Fan	FAN#4

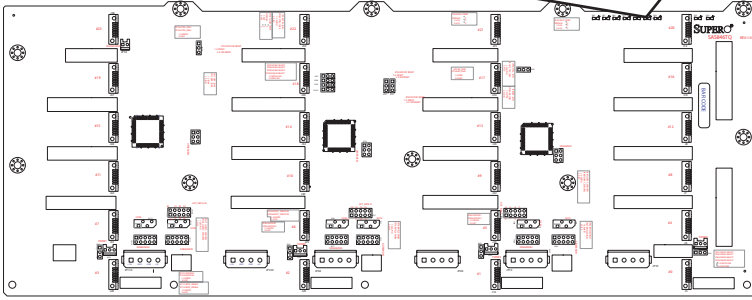
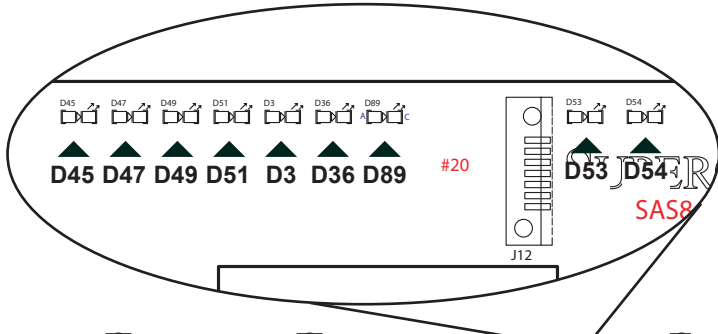
I²C and SGPIO Modes and Jumper Settings

This backplane can utilize I²C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumper. The following information details which jumper must be configured to use SGPIO mode or restore your backplane to I²C mode.

SGPIO Setting (Default)		
Jumper	Jumper Setting	Note
JP84	1-2	SGPIO Mode Setting

I²C Setting		
Jumper	Jumper Setting	Note
JP84	2-3	I ² C Setting

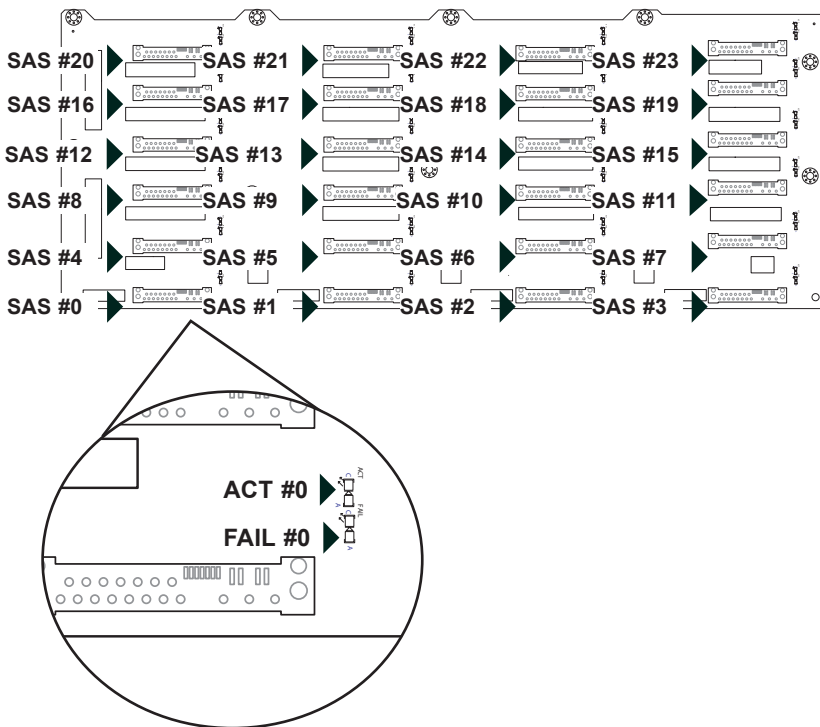
Front LED Indicators



Front Panel LEDs

LED	STATE	SPECIFICATION
D45	ON	Failure in Fan #1
D47	ON	Failure in Fan #2
D49	ON	Failure in Fan #3
D51	ON	Failure in Fan #4
D3	ON	Alarm #1: Overheat/Drive Failure in Channel 1
D36	ON	Alarm #2: Overheat/Drive Failure in Channel 2
D89	ON	Alarm #3: Overheat/Drive Failure in Channel 3
D53	OFF	+5V : Backplane power failure. Light is on during normal operation.

C-4 Rear Connectors and LED Indicators



Rear SAS/SATA Connectors

Rear Connector	SAS Drive Number	Rear 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 HDD #16
SAS #5	SAS/SATA HDD #5	SAS #17	SAS/SATA HDD #17
SAS #6	SAS/SATA HDD #6	SAS #18	SAS/SATA HDD #18
SAS #7	SAS/SATA HDD #7	SAS #19	SAS/SATA HDD #19
SAS #8	SAS/SATA HDD #8	SAS #20	SAS/SATA HDD #20
SAS #9	SAS/SATA HDD #9	SAS #21	SAS/SATA HDD #21
SAS #10	SAS/SATA HDD #10	SAS #22	SAS/SATA HDD #22
SAS #11	SAS/SATA HDD #11	SAS #23	SAS/SATA HDD #23

Rear LED Indicators		
Rear LED	Hard Drive Activity	Failure LED
SAS #0	D12	D5
SAS #1	D22	D23
SAS #2	D40	D37
SAS #3	D102	D107
SAS #4	D13	D6
SAS #5	D24	D29
SAS #6	D41	D38
SAS #7	D104	D108
SAS #8	D14	D7
SAS #9	D25	D30
SAS #10	D42	D39
SAS #11	D106	D109
SAS #12	D15	D8
SAS #13	D26	D31
SAS #14	D87	D88
SAS #15	D111	D110
SAS #16	D18	D19
SAS #17	D27	D32
SAS #18	D100	D103
SAS #19	D118	D119
SAS #20	D21	D20
SAS #21	D28	D33
SAS #22	D101	D105
SAS #23	D120	D121