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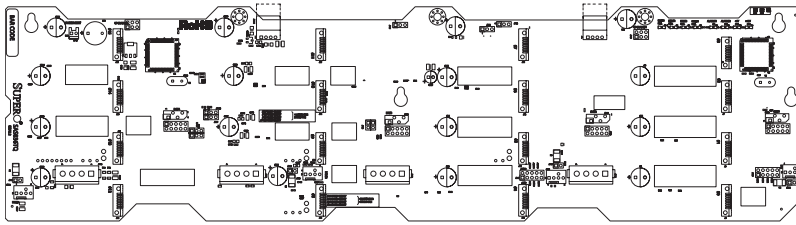

SAS-836TQ Backplane

USER'S GUIDE

Rev. 1.0c

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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.

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Table of Contents

Contacting Supermicro iv
Returning Merchandise for Service v

Chapter 1 Safety Guidelines

1-1 ESD Safety Guidelines 1-1
1-2 General Safety Guidelines 1-1
1-3 An Important 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 2-2
2-3 Front Jumper Locations and Pin Definitions 2-5
Explanation of Jumpers 2-5
General Jumper Settings 2-5
Fan Jumper Settings 2-6
I²C and SGPIO Modes and Jumper Settings 2-6
SGPIO Setting 2-7
SAS Port Connections in I²C and SGPIO Settings 2-7
Front LED Indicators 2-8
Front Pane LEDs 2-8
2-4 Rear Connectors and LED Indicators 2-9
Rear SAS/SATA Connectors 2-9

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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.

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

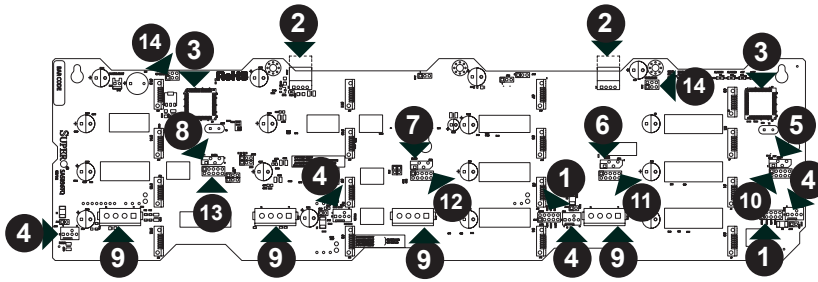
- Always disconnect power cables before installing or removing any components from the computer, including this backplane.
- Disconnect the power cable before installing or removing any cables from this backplane.
- Make sure that the this backplane is securely and properly installed on the motherboard 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.

Chapter 2
Jumper Settings and Pin Definitions

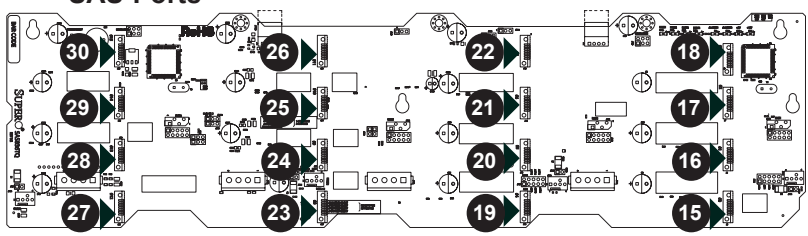
2-1 Front Connectors and Jumpers



Front Connectors

#1. ACT_IN#0-15: JP26 and JP47
#2. DVD-ROM/Floppy Drive Power: JP105 and JP106
#3. Chip: MG9072
#4. Fan Connectors: JP54, JP56, JP58 and JP60
#5. I²C Connector#1 JP37
#6. I²C Connector#2 JP95
#7. I²C Connector#3 JP52
#8. I²C Connector#4 JP96
#9. Power Connectors (4-pin): JP10, JP13, JP46, and JP48
#10. SideBand Connector#1 JP66
#11. SideBand Connector#2 JP68
#12. SideBand Connector#3 JP75
#13. SideBand Connector#4 JP77
#14. Upgrade Connectors: JP69 and JP78
#15. SAS Port #0 J5
#16. SAS Port #1 J6
#17. SAS Port #2 J7
#18. SAS Port #3 J8
#19. SAS Port #4 J10
#20. SAS Port #5 J12
#21. SAS Port #6 J14
#22. SAS Port #7 J16
#23. SAS Port #8 J22
#24. SAS Port #9 J23
#25. SAS Port #10 J24
#26. SAS Port #11 J25
#27. SAS Port #12 J26
#28. SAS Port #13 J29
#29. SAS Port #14 J30
#30. SAS Port #15 J32

SAS Ports



2-2 Front Connector and Pin Definitions

#1. Activity LED Header

The activity LED headers, designated JP26 and JP47, are used to indicate the activity status of each SAS drive. These activity LED headers are used by the host controller for the SATA drives that previously had no activity status output. If using a SAS drive, and for most SATA drives, these activity headers are not required.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.

SAS Activity LED Header Pin Definitions (JP26)

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

SAS Activity LED Header Pin Definitions (JP47)

Pin #	Definition	Pin #	Definition
1	ACT IN#8	6	ACT IN#12
2	ACT IN#9	7	ACT IN#13
3	ACT IN#10	8	ACT IN#14
4	ACT IN#11	9	ACT IN#15
5	Ground	10	Empty

#2. CD-ROM/Floppy 4-Pin Connectors

The 4-pin connectors, designated JP105 and JP106, provide power to the CD-ROM and floppy drives. See the table on the right for pin definitions.

CD-ROM/ FDD Power 4-Pin Connector (JP105 and JP106)

Pin#	Definition
1	+5V
2 and 3	Ground
4	+12V

#3. MG9072 Chip

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

#4. Fan Connectors

The 4-pin connectors, designated JP54, JP56, JP58 and JP60, provide power to the fans. See the table on the right for pin definitions. These 4-pin connectors are compatible with 3-pin and 4-pin fans.

Fan Connectors (JP54, JP56, JP58, and JP60)

Pin#	Definition
1	Ground
2	+12V
3	Tachometer
4	No connection

#5., #6., #7., #8. I²C Y-Cable Connectors

The I²C Y-cable connectors, designated JP37, JP52, JP95, and JP96, are for enclosure management of the I²C mode connection. These connectors are used only if the I²C is not embedded into the sideband connectors. See the table on the right for pin definitions.

I²C Y-Cable Connector Pin Definitions (JP37, JP52, JP95, and JP96)

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

#9. Backplane Main Power Connectors

The 4-pin connectors, designated JP10, JP13, JP46, and JP48, provide power to the backplane. See the table on the right for pin definitions. All four of these connectors must be used at the same time.

Backplane Main Power 4-Pin Connector (JP10, JP13, JP46, and JP48)

Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

#10., #11., #12., #13. Sideband Headers

The sideband headers are designated JP66, JP68, JP75 and JP77. are for enclosure management of the SGPIO mode connection. See the table to the right for pin definitions.

Sideband Headers (JP66, JP68, JP75 and JP77)

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 Connection	9	No Connection

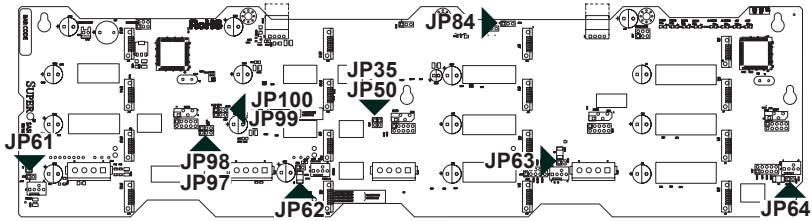
#14. Upgrade Connectors

The upgrade connectors are designated JP69 (for U19) and JP78 (for U40). Upgrade connectors are for manufacturing use only.

#15-#30. SAS Ports

The SAS ports are used to connect the SAS drive cables. The 16 ports are designated #0 - #15. Each port is also compatible with SATA drives.

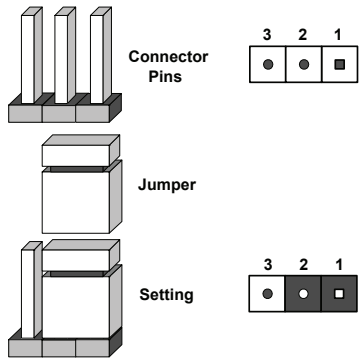
2-3 Front Jumper Locations and Pin Definitions



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.



General Jumper Settings		
Jumper	**Jumper Settings**	**Note**
JP35	Open: Default Closed: Reset	9072 Chip Reset #1
JP50	Open: Default Closed: Reset	9072 Chip Reset #2

Fan Jumper Settings

The SAS-836TQ 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	Closed: With Fan (default) Open: No Fan	Fan#1 Enable/Disable
JP54		Fan#1 Connector
JP62	Closed: With Fan (default) Open: No Fan	Fan#2 Enable/Disable
JP56		Fan#2 Connector
JP63	Closed: With Fan (default) Open: No Fan	Fan#3 Enable/Disable
JP58		Fan#3 Connector
JP64	Closed: With Fan (default) Open: No Fan	Fan#4 Enable/Disable
JP60		Fan#4 Connector
JP97	1-2 With Fan (default) 2-3 No Fan	Fan #1 Selection for MG907X Monitor
JP98	1-2 With Fan (default) 2-3 No Fan	Fan #2 Selection for MG907X Monitor
JP99	1-2 With Fan (default) 2-3 No Fan	Fan #3 Selection for MG907X Monitor
JP100	1-2 With Fan (default) 2-3 No Fan	Fan #4 Selection for MG907X Monitor

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 jumpers. The following information details which jumpers must be configured to use SGPIO mode or restore your backplane to I2C mode.

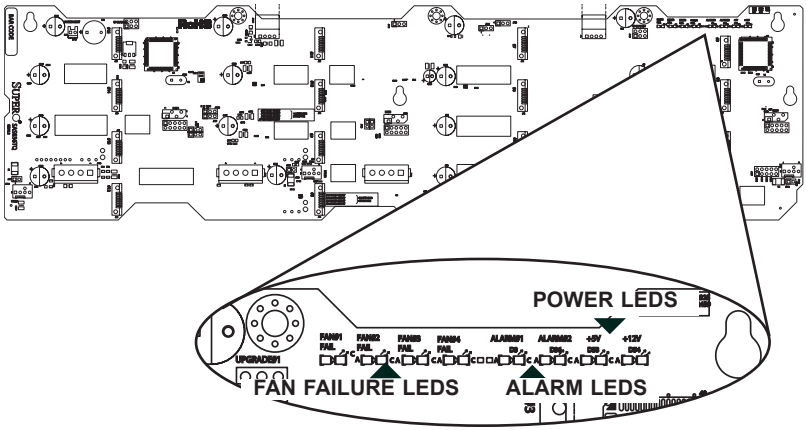
SGPIO/I²C Setting		
Jumper	**Jumper Setting**	**Note**
JP84	1-2 (default)	SGPIO Mode
JP84	2-3	I²C Mode

SAS Port Connections in I²C and SGPIO Settings

Use the following chart when connecting this backplane. If you connect the SAS ports out of order, you will not able to easily identify drives using the LED function.

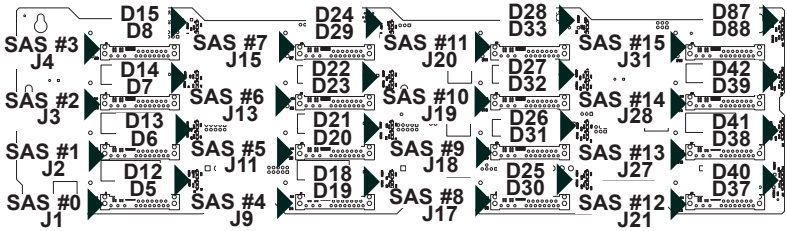
SAS Port Connections in I²C and SGPIO Settings		
Port #	**I²C**	**SGPIO**
# 0 - 3	I²C #1	Sideband #1
# 4 - 7	I²C #2	Sideband #2
# 8 - 11	I²C #3	Sideband #3
# 12 - 15	I²C #4	Sideband #4

Front LED Indicators



Front Pane LEDs		
LED	**STATE**	**SPECIFICATION**
Fan #1 Fail	ON	Failure in Fan #1
Fan #2 Fail	ON	Failure in Fan #2
Fan #3 Fail	ON	Failure in Fan #3
Fan #4 Fail	ON	Failure in Fan #4
Alarm #1	ON	Overheat/Fan Failure/Drive Failure in Channel 1
Alarm #2	ON	Overheat/Fan Failure/Drive Failure in Channel 2
+5V	OFF	Backplane power failure. Light is on during normal operation.
+12V	OFF	Backplane power failure. Light is on during normal operation.

2-4 Rear Connectors and LED Indicators



Rear SAS/SATA Connectors			
Rear Connector	**SAS Drive Number**	**Rear Connector**	**SAS Drive Number**
SAS #0	SAS/SATA HHD #0	SAS #8	SAS/SATA HHD #8
SAS #1	SAS/SATA HHD #1	SAS #9	SAS/SATA HHD #9
SAS #2	SAS/SATA HHD #2	SAS #10	SAS/SATA HHD #10
SAS #3	SAS/SATA HHD #3	SAS #11	SAS/SATA HHD #11
SAS #4	SAS/SATA HHD #4	SAS #12	SAS/SATA HHD #12
SAS #5	SAS/SATA HHD #5	SAS #13	SAS/SATA HHD #13
SAS #6	SAS/SATA HHD #6	SAS #14	SAS/SATA HHD #14
SAS #7	SAS/SATA HHD #7	SAS #15	SAS/SATA HHD #15

Rear LED Indicators		
Rear LED	**Hard Drive Activity**	**Failure LED**
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8
SAS #4	D18	D19
SAS #5	D21	D20
SAS #6	D22	D23
SAS #7	D24	D29
SAS #8	D25	D30
SAS #9	D26	D31
SAS #10	D27	D32
SAS #11	D28	D33
SAS #12	D40	D37
SAS #13	D41	D38
SAS #14	D42	D39
SAS #15	D87	D88

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