

## **SAS 815TQ Backplane**

### **USER'S GUIDE**

Rev. 1.0a

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## Notes

## 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 SAS 825TQ Backplane.
- Disconnect the power cable before installing or removing any cables from the SAS 825TQ Backplane.
- Make sure that the SAS 825TQ 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

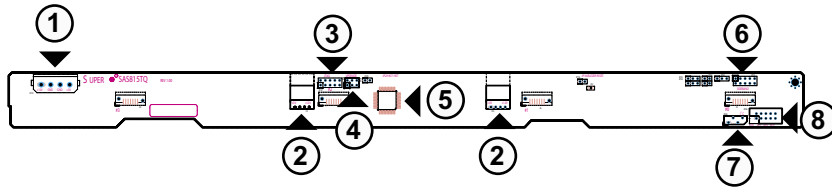
- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

## Notes

## Chapter 2

### Jumper Settings and Pin Definitions

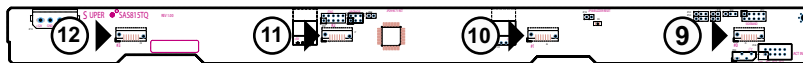
#### 2-1 Front Connectors and Jumpers



##### Front Connectors

- #1. Power Connectors (4-pin) JP10
- #2. CD-ROM/Floppy Drive Power J9 and J10
- #3. JTAG JP47
- #4. Upgrade Pin JP46
- #5. MG9071 Chip
- #6. Sideband JP51
- #7. I<sup>2</sup>C Connector JP44
- #8. ACT\_IN JP26
- #9. SAS Port #0 J5
- #10. SAS Port #1 J6
- #11. SAS Port #2 J7
- #12. SAS Port #3 J8

##### SAS Ports



## 2-2 Front Connector and Pin Definitions

### #1. Backplane Main Power Connectors

The 4-pin connectors, designated JP10 provide power to the backplane. See the table on the right for pin definitions.

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

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

The 4-pin connectors, designated J9 and J10, 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 (J9 and J10) |            |
|---|------------|
| Pin#  | Definition |
| 1   | +5V        |
| 2 and 3                                       | Ground     |
| 4   | +12V       |

### #3/#4. JTAG Connector and Upgrade Connector

The JTAG connector, designated JP47, and the Upgrade connector, designated JP46, are diagnostic purposes. These connectors should be used a certified and experienced technician.

### #4. MG9071 Chip

The MG9071 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.



**#6. Sideband Headers**

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

| Sideband Headers<br>(JP51) |                            |       |                     |
|----------------------------|----------------------------|-------|---------------------|
| 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       |

**#7. I<sup>2</sup>C Connectors**

The I<sup>2</sup>C Connectors, designated JP44, are used to monitor HDD activity and status. See the table on the right for pin definitions.

| I <sup>2</sup> C Connector<br>Pin Definitions<br>(JP44) |               |
|---|---------------|
| Pin#  | Definition    |
| 1   | Data          |
| 2   | Ground        |
| 3   | Clock         |
| 4   | No Connection |

**#8. Activity LED Header**

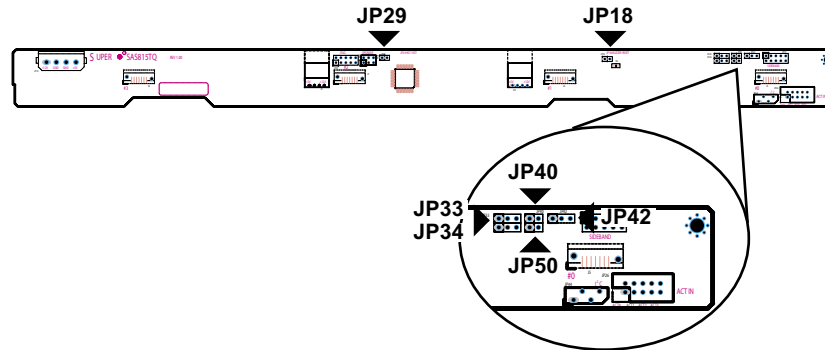
The activity LED header, designated JP26, is used to indicate the activity status of each SAS drive. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

| SAS Activity LED Header<br>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      |

**#9-#12. SAS Ports**

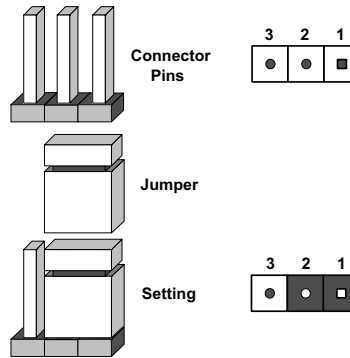
The SAS ports are used to connect the SAS drive cables. The four ports are designated #0 - #4. Each port is also compatible with SATA drives.

### 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               |
| JP18            | Open: Enabled<br>Closed: Disabled | Buzzer Reset       |
| JP29            | Open: Default<br>Closed: Reset    | MG 9071 Chip Reset |

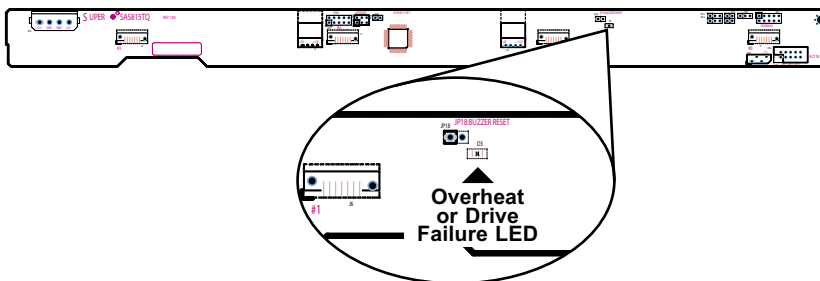
### I<sup>2</sup>C and SGPIO Modes and Jumper Settings

This backplane can utilize I<sup>2</sup>C or SGPIO. I<sup>2</sup>C 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 I<sup>2</sup>C mode.

| I <sup>2</sup> C Setting (Default) |                |                               |
|------------------------------------|----------------|-------------------------------|
| Jumper                             | Jumper Setting | Note                          |
| JP33                               | 2-3            | Controller ID                 |
| JP34                               | 1-2:ID#0       | Backplane ID                  |
| JP40                               | Open           | I <sup>2</sup> C Reset SD OUT |
| JP42                               | 2-3            | Backplane ID SDIN             |
| JP50                               | Closed         | I <sup>2</sup> C Reset        |

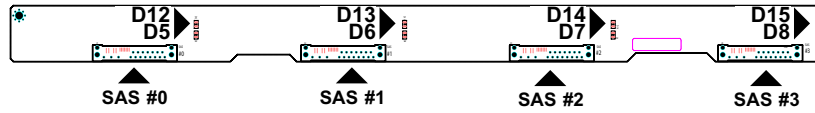
| SGPIO Setting |                |                               |
|---------------|----------------|-------------------------------|
| Jumper        | Jumper Setting | Note                          |
| JP33          | 1-2            | Controller ID                 |
| JP34          | 1-2:ID#0       | Backplane ID                  |
| JP40          | Closed         | I <sup>2</sup> C Reset SD OUT |
| JP42          | 1-2            | Backplane ID SDIN             |
| JP50          | Open           | I <sup>2</sup> C Reset        |

### FRONT LED INDICATORS



| Front Pane LEDs |       |                           |
|-----------------|-------|---------------------------|
| LED             | STATE | SPECIFICATION             |
| D3              | ON    | Overheat or Drive Failure |

## 2-4 Rear Connectors and LED Indicators



| Rear SAS/SATA Connectors |                  |                  |
|--------------------------|------------------|------------------|
| Rear Connector           | Connector Number | SAS Drive Number |
| SAS #0                   | J1               | SAS/SATA HDD #0  |
| SAS #1                   | J2               | SAS/SATA HDD #1  |
| SAS #2                   | J3               | SAS/SATA HDD #2  |
| SAS #3                   | J4               | SAS/SATA HDD #3  |

| Rear LED Indicators |                     |             |
|---------------------|---------------------|-------------|
| Rear Connector      | Hard Drive Activity | Failure LED |
| SAS #0              | D12                 | D5          |
| SAS #1              | D13                 | D6          |
| SAS #2              | D14                 | D7          |
| SAS #3              | D15                 | D8          |