SUPER®


# SAS810TQ Backplane

## USER'S GUIDE

Rev. 1.0

# Table of Contents



**User's Guide Revision: Rev. 1.0**
**Release Date: 01/16/2006**

# Safety Information and Technical Specifications

## 1. Safety Guidelines

To avoid personal injury and property damage, please carefully follow all the safety steps listed below when accessing your system or handling the components:

### 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.

### General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the SAS810TQ Backplane.
- Disconnect the power cable before installing or removing any cable from the SAS810TQ Backplane.
- Make sure that the SAS810TQ Backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

### An Important Note to the User

- 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've received may or may not look exactly the same as the graphics shown in this manual.

# 2. Introduction to the SAS810TQ Backplane

## A. Overview

The SAS810TQ Backplane is a highly efficient, highly compatible and easy to use SES-2 backplane that offers the most advanced functionality provided by the Serial Attached/Serial Link Industry in a slim package. With the built-in AMI MG 9071 chip, the SAS810TQ Backplane allows the user to configure RAID 0 and RAID 1, maximizing data storage capability and data transferring reliability. Additionally, the SAS810TQ supports SATA up to 3Gbps and SAS up to 3Gbps with *SES-2 (SCSI Enclosure Services-2) capabilities, providing complete Serial Attached Services and Serial Link Solutions to the market. (*Refer to the section below.)

## B. Backplane Features

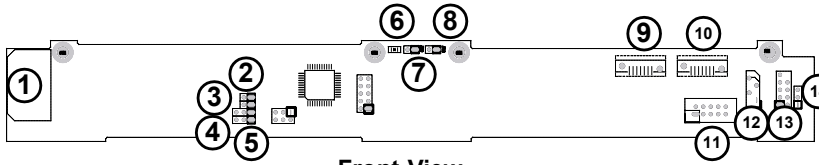
The SAS810TQ Backplane supports the following features when it is installed on a motherboard that has an onboard SAS controller:

1. Backward compatible with SATA drives
2. Supporting SAS drives with a transfer rate of 3Gbps
3. Supporting $I^2C$ Interface to communicate with SAS/SATA Host Bus Adaptors (HBA)
4. Minimizing the need for cables and connectors, uncluttering server space, and providing a trouble-free installation environment for the user
5. Supporting SES-2 (SCSI Enclosure Services-2) protocol, providing the following features:
    - Drive activity and drive failure indication for each drive slot
    - Overheat/drive failure alarm via a buzzer installed on the backplane
    - An overheat/drive failure LED Indicator built in
    - Temperature Monitoring via a 2 wire ($I^2C$) temperature sensor in the MG 9071 chip

# 3. Jumper Settings and Pin Definitions

## A. Front Connectors and Jumpers

### A-1 Front Jumper/Connector Locations




**Front View**

### A-2. Front Connector and Jumper Descriptions

#1. JP10: Backplane Main PWR
#2. JP40: I²C Reset (Jumper)
#3. JP50: I²C Reset (Jumper)
#4. JP33: I²C Controller ID (Jumper)
#5. JP34: I²C Backplane ID (Jumper)
#6. D3: Overheat/Drive Fail LED
#7. JP29: MG9071 Reset, if short (Jumper)
#8. JP18: Buzzer Reset, if short (Jumper)
#9. SAS#1 (J6)
#10.SAS#0 (J5)
#11. JP26: Activity LED Header
#12. JP44: I²C Connector
#13: JP51: Sideband
#14.JP42: I²C Backplane ID (Jumper)

### A-3. Front Connector Pin Definitions

**1. Backplane Main Power Connector (JP10) Pin Definitions**

You must use the 4-pin power connector: JP10 (marked "1" on the layout above) to provide adequate power to the Backplane. See the table on the right for pin definitions.

**Backplane Main PWR 4-pin Connector JP10**

| Pins # | Definition |
|---|---|
| 1 | +12 V |
| 2 & 3 | Ground |
| 4 | +5V |

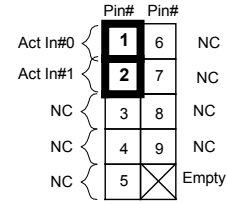
**2. SAS Connectors: SAS#0 (J5), SAS#1 (J6)**

**3. I²C Connector: JP44 (#17)**

**4. Activity LED Header: JP26 (#16)**

The Activity LED Header, located at JP26 on the front panel, transmits signals to indicate the activity status of each SAS slot. For the Activity LED Header to work properly, please connect an LED cable to JP26 as shown on the right. See the table in Section A-5 for pin definitions.

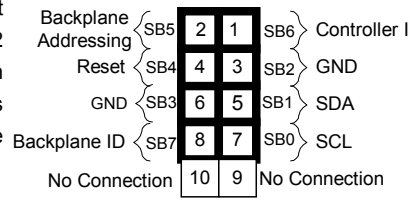
JP26
SAS Activity LED




(*Note 1: "NC"=No Connection,
Note 2: Connect a 4-pin LED cable to Pin1-Pin 4 of JP26 only.)

**5. Sideband Header: JP51 (#13)**

The Sideband Header is located at JP51 on the front panel. For SES-2 to work properly, please connect an 8-pin Sideband cable to JP51 as shown on the right. See the table for pin definitions.




**Sideband Pin Definitions (JP51)**

**A-4 Front Overheat/Drive Failure LED Indicator: D3 (#6)**

| Front LED | State | Specification |
|---|---|---|
| D3 (Front) | On | Overheat or Drive Failure |

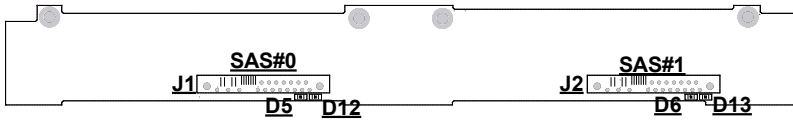
**A-5 Front Panel Jumper Settings and Pin Definitions**

| Jumper | Description | Definition |
|---|---|---|
| JP18 | Open (*Default) | Normal |
| | Short | Buzzer Reset |
| JP26 | Open (*Default) | Act #0-1 In |
| | 1 | Act In #0 |
| | 2 | Act In #1 |
| JP29 | Open (*Default) | Normal |
| | Short | MG9071 Reset |
| JP33 | 1-2 | $I^2C$ Controller ID: SGPIO |
| | 2-3 (*Default) | $I^2C$ Controller ID: $I^2C$ |
| JP34 | 1-2 (*Default) | $I^2C$ Backplane ID: ID#0 |
| | 2-3 | $I^2C$ Backplane ID: ID#1 |
| JP40 | Short | $I^2C$ Reset: SGPIO |
| | Open (*Default) | $I^2C$ Reset: $I^2C$ |
| JP42 | 1-2 | $I^2C$ Backplane ID: SGPIO |
| | 2-3 (*Default) | $I^2C$ Backplane ID: $I^2C$ |
| JP50 | Open | $I^2C$ Reset: SGPIO |
| | Short (*Default) | $I^2C$ Reset: $I^2C$ (On) |

## B. Rear Connectors and LED Indicators

### B-1 Rear Connector/LED Indicator Locations

**Rear View**




(*See below for rear connector/LED descriptions.)

### B-2 Rear Connector/LED Indicator Descriptions

**Rear Connectors**

| Rear Connector | Specification |
|---|---|
| J1 (Rear) | SAS#0 HDD (connected to HDD) |
| J2 (Rear) | SAS#1 HDD (connected to HDD) |

**Rear LED Indicators**

| Rear LED Indicators | Specification |
|---|---|
| D12 (Rear) | SAS#0 Activity LED |
| D13 (Rear) | SAS#1 Activity LED |
| D5 (Rear) | SAS#0 Fail LED |
| D6 (Rear) | SAS#1 Fail LED |

**Notes**