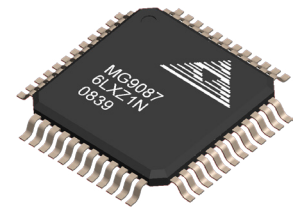


# AMI MG9087 Backplane Controller

## For SAS/SATA backplanes



*The MG9087 is a low-cost, ultra-small, single-chip solution for use on SAS and SATA Backplanes for up to 8 drives per backplane. The chip features USB support and register-based access to the BMC through SMBus. LED management utilizes the SGPIO protocol or SES-2. Cascaded controllers can support up to 32 drives.*

A true single-chip solution, the AMI MG9087 helps optimize backplane layouts with the latest enclosure management technologies. This highly integrated and space-optimized chip features an internal oscillator, is available in TQFP-48 Package (9mm x 9mm) and omitting the usual components that drive backplane costs up such as external crystal, flash memory, Power-On-Reset (POR) chip, regulator, EEPROM LED Driver, FRU and transceivers. It also ships ready to use with no firmware or programming required.

### BENEFITS

MG9087 controller can manage LED patterns for up to 8 SAS/SATA drives providing drive activity, fail, rebuild and locate LED indication signals. For LED management, it supports SGPIO (SFF-8485) and IBPI (SFF-8489) or SES-2 over SMBus. These features make the controller suitable for a wide variety of systems handling multiple drives from 6 to 32. Currently, 30 different off-the-shelf configurations are available from AMI.

MG9087 leverages the use of power signals on the SAS/SATA drive connector to detect its presence and activity. LED management uses SGPIO (SFF-8485) or SES-2 over SMBus from RAID Controllers, PCH and SAS Expanders. USB 2.0 compliant support in MG9087 can be used by the host system to monitor status of the drives, run diagnostics and firmware update.

### LED BLINKING PATTERN

In 3-LED mode, MG9087 follows the blinking pattern as defined in the following table for various drive states:

Drive State:	3-LEDs/SLOT		
	Activity (Green) LED	Locate (Amber) LED	Fail (Red) LED
Drive Not Present	OFF	X	X
Drive Present, No Activity	ON	X	X
Drive Present, Activity	4Hz	X	X
Locate (Identify)	X	4Hz	OFF
Fail	OFF	OFF	ON
Rebuild	X	OFF	1Hz
Predicted Fail	X	OFF	2 Fast Blink at 4Hz & Pause for 0.5 Sec

## HIGHLIGHTS:

- Support Enclosure Management for SAS/ SATA Drives
- Support Enclosure Management through 2 channels of SGPIO (SFF-8485) for SAS/SATA drives
- Enclosure Management is also supported through SES-2 over SMBUS
- Supports IBPI specification SFF-8489
- Supports Present & Status LEDs for each drive
  - Directly drives 2 LEDs for up to 8 slots
  - Directly drives 3 LEDs for up to 6 slots
  - With latches, drives 3 LEDs for up to 8 slots
- Global Activity & Global Fail LED supported
- Cascaded controllers can support up to 32 drives.
- USB 2.0 compliant support for Status, Monitoring, Diagnostic, and FW Update
- Built in Regulator for 5V operation
  - Supply range 3.6V-5.25V
- Small TQFP-48 Package
  - 9mm X 9 mm pin outline
  - 7mm X 7 mm housing
- Internal Oscillator
  - No external crystal needed
- Part ships ready to use, no firmware or programming required
- Firmware Upgradeable through SMBus from host BMC
- Diagnostics and FW upgrade tools available for Windows, Linux, EFI and DOS



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