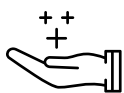




# AMI MG9094 Backplane Controller For SAS/SATA & NVME Backplanes

The AMI MG9094 is a low-cost, ultra-small, single-chip solution for enclosure management of SAS/SATA and new generation NVMe® backplanes for up to 8 drives per backplane. Cascaded controllers can support up to 32 drives.

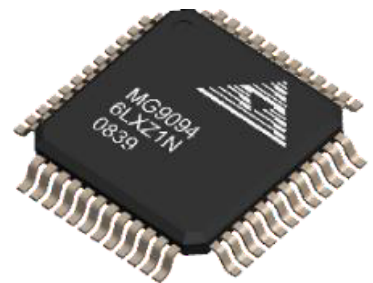
A true single-chip solution, the AMI MG9094 helps optimize backplane layouts with the latest enclosure management technologies. This highly integrated and space-optimized chip features and internal oscillator, is available in TQFP-48 Package (9mm x 9mm), and omitting the usual components that drive backplane costs up such as external crystal, flash memory, regulator, EEPROM and LED Driver. It also ships ready to use with no firmware or programming required.



## Benefits

MG9094 controller directly drives 2 LEDs for up to 8 SAS/SATA drives providing drive activity, fail, rebuild and locate LED indication signals. It supports SGPIO (SFF-8485) and IBPI (SFF-8489) for LED management, and SMBus for firmware upgrade from host BMC. These features make the controller suitable for a wide variety of systems handling multiple drives from 2 to 32. Currently, 44 different off-the-shelf configurations are available from AMI.

MG9094 leverages the use of power signals on the SAS/SATA drive to detect its presence and activity. LED management uses SGPIO (SFF- 8485) from RAID Controllers, PCH and SAS Expanders.





## LED Blinking Pattern

In 3-LED mode, MG9094 follows the blinking pattern as defined in the following table for various drive states:

Drive State	3-LEDs/SLOT		
	Activity (Green) LED	Activity (Green) LED	Activity (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	ODD	OFF	ON
Rebuild	X	ODD	1Hz
Predicted Fail	X	OFF	2 Fast Blink at 4Hz & Pause for 0.5 Sec





## Features

- Support Enclosure Management for SAS/SATA/NVMe Drives
- Support Enclosure Management through 2 channels SGPIO (SFF-8485) for SAS/SATA drives
- Supports Enclosure Management through Host BMC SMBus for NVMe drives
- 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
  - Supports IBPI Specification SFF-8489
  - Global Activity & Global Fail LED supported
  - Cascaded controllers can support up to 32 drives.
- 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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