

MegaRAC[®]-PM 4.0

Firmware Solution for IPMI 2.0 Platform Management

Multiple BMC Support

- Renesas H8S 2166/67/68
- PowerPC/ RISC/ MIPS
- Easily ported to other BMCs

Implements IPMI 2.0 Specification

- Side-band Manageability over Board LAN NIC
- System Interface, Event Log (SEL), Sensor Support, Detailed System Information
- SDR Repository
- FRU Information
- Health Monitoring, Watchdog Timer
- LAN Alerting
- Event Generation
- Serial over LAN
- Remote Power Control
- Encryption
- Enhanced authentication

Customization

- Optional embedded KVM chip enhancement
- Optional tools for platform porting

AMI's MegaRAC-PM firmware solution is fully compliant with the Intelligent Platform Management Interface (IPMI) 2.0 specification, jointly developed by Dell, HP, IBM and NEC. The IPMI industry standard defines a hardware-software subsystem that performs key platform monitoring and management independently from the main processor. Management tasks are executed by a specialized micro-controller, or Baseboard Management Controller (BMC), that operates on standby power independent of the system's main power to periodically poll system health variables such as temperature, fans, voltage, power supplies and chassis intrusion. When discovering any anomaly, the BMC can log the event, send alerts via LAN and initiate recovery actions such as system reset.

MegaRAC-PM firmware fully implements IPMI 2.0, providing the key interfaces of a standardized management subsystem that performs health monitoring and management functions independently from the main system processor.

AMI's IPMI firmware solution has side-band communication capabilities, enabling messaging through the system NIC via LAN. Side-band management combines the low-cost design of an in-band management scenario with partial out-of-band manageability, ideal for entry and mid-range blades and servers. It is also a space efficient solution that does not require an extra NIC slot for management purposes. Side-band based management simplifies deployment complexity providing manageability through the same NIC port (easy cabling) and the same IP address (easy discovery and server association).

MegaRAC-PM enhanced features include Serial over LAN capability, RMCP+ enhanced authentication /encryption and firmware firewall.

AMI's reference design is extensible, expandable, portable, dependable and easy to deploy. Along with the firmware solution, AMI can provide a set of development and porting tools that facilitate platform porting:

- > Platform Manager Configuration Program (PMCP) for graphical firmware porting and sensor configuration
- > Platform Development Kit (PDK) for OEMs to add their own IP and customizations. Reference design schematics are available to OEMs to simplify the design process. AMI can provide an optional embedded KVM module to enhance manageability.



IPMI System Interface Support

- KCS
- BT

IPMI Communication Interface

- I2C
- LAN (Shared NIC)
- UART
- IPMB
- ICMB

Sensors/Devices Supported

- Voltage
- Temperature
- Fans (Tach and Speed control)
- I2C Multiplexer
- LED
- I2C Hardware Monitoring Devices
- Digital Sensors

Utility Support

- SDR/FRU Creation Utility
- SDR Flash Utility
- FRU Flash Utility
- Firmware Flash Utility

IPMI Capabilities

- Multi-session access via LAN
- Remote Power On/Off
- Remote Reset
- PET Messages
- Configurable multiple PET Destinations
- Configurable PET Policies
- SEL/SDR/FRU Monitoring
- MD2, MD5 Authentication
- User Privilege Levels (Callback, User, Admin)
- User Account Manager
- Text Mode Console Redirection
- Serial/Modem IPMI Messaging (Basic/PPP/Terminal Mode)
- Alpha/Numeric Paging
- Modem Callback
- BIOS POST, OS Loading/Running Watchdog Timer

IPMI 2.0 Global Commands

- Get Device ID
- Cold Reset
- Warm Reset
- Get Self Test Results
- Manufacturing Test On
- Set/Get ACPI Power State
- Get Device GUID
- Watchdog Timer Commands
- Reset/Get/Set Watchdog Timer
- BMC Device / Messaging Commands
- Set/Get BMC Global Enables
- Clear/Get Message Flags
- Enable Message Channel Receive
- Get/Send Message
- Read Event Message Buffer

- Get System GUID
- Get Channel Authentication Capabilities
- Get Session Challenge
- Activate/Close Session
- Set Session Privilege Level
- Get Session Info
- Get AuthCode
- Set/Get Channel Access
- Get Channel Info
- Set/Get User Access
- Set/Get User Name
- Set User Password
- Activate/Deactivate Payload
- Get Payload Activation Status
- Get Payload Instance Info
- Set/Get User Payload Access
- Get Channel Payload Support
- Get Channel Payload Version
- Get Channel OEM Payload Info
- Master Write-Read
- Get Channel Cipher Suites
- Suspend/Resume Payload Encryption
- Set Channel Security Keys
- Get System Interface Capabilities
- Chassis Device Commands
- Get/Set Chassis Capabilities
- Get Chassis Status
- Chassis Control
- Chassis Identify
- Set Power Restore Policy
- Get System Restart Cause
- Set/Get System Boot Options
- Get POH Counter

Event Commands

- Set/Get Event Receiver
- Platform Event Message
- PEF and Alerting Commands
- Get PEF Capabilities
- Arm PEF Postpone Timer
- Set/Get PEF Configuration Parameters
- Set/Get Last Processed Event ID
- Alert Immediate
- PET Acknowledge

Sensor Device Commands

- Get Sensor Reading Factors
- Set/Get Sensor Hysteresis
- Set/Get Sensor Threshold
- Set/Get Sensor Event Enable
- Get Sensor Reading
- Set Sensor Type

FRU Device Commands

- Get FRU Inventory Area Info
- Read/Write FRU Data
- SDR Device Commands
- Get SDR Repository Info
- Get SDR Repository Allocation
- Reserve SDR Repository
- Get/Add SDR

- Partial Add SDR
- Clear SDR Repository
- Get SDR Repository Time
- Enter/Exit SDR Repository Update
- Run Initialization Agent
- SEL Device Commands
- Get SEL Info
- Get SEL Allocation Info
- Reserve SEL
- Get/Add SEL Entry
- Clear SEL
- Get/Set SEL Time
- LAN Device Commands
- Get/Set LAN Configuration Parameters
- Suspend BMC ARPs
- Serial / Modem Commands
- Set/Get Serial Modem Configuration
- Set Serial Modem Mux
- Get TAP Response Codes
- Serial/Modem Connection Active
- Callback
- Set/Get User Callback Options
- SOL Activating
- Set/Get SOL Configuration Parameters
- ICMB Bridge Commands
- Set/Get Bridge State
- Get/Set ICMB Address
- Set/Get Bridge Proxy Address
- Get/Clear Bridge Statistics
- Get ICMB Capabilities
- Get ICMB Connector Info

ICMB Discovery Commands

- Prepare for Discovery
- Get Addresses
- Set Discovered
- Get/Set Chassis Device ID
- ICMB Bridging Commands
- Bridge Request
- Bridge Message
- ICMB Event Commands
- Get Event Count
- Set/Get Event Destination
- Set/Get Event Reception State
- Send ICMB Event Message



American Megatrends Inc.

5555 Oakbrook Parkway, Suite 200, Norcross,

GA 30093 | t: 770.246.8600

Sales & Product Information

sales@ami.com | t: 800.828.9264

Technical Support

support@ami.com | t: 770.246.8645

www.ami.com