American Megatrends
Corporate Overview
CORPORATE BACKGROUND
A SUCCESSFUL AND STABLE COMPANY

• AMI is #1 in BIOS/UEFI

• Long history of success and stability
  • Privately held company, founded in 1985
  • Stable corporate structure and strong capitalization
  • Over 1300 employees worldwide, with headcount growing Y2Y

• Comprehensive product catalog for OEM/ODM customers
  • BIOS, UEFI, tools & utilities, BMC and remote management, backplane controllers and more

• ISO 9001:2015 certified
AMI WORLDWIDE OFFICES

• America
  • Atlanta, Georgia (Headquarters)
  • Austin, Texas (Field Office)
  • San Jose, CA (Field Office)
  • Portland, OR (Field Office)

• Europe
  • Munich, Germany

• Asia
  • Jinan, China
  • Kunshan, China
  • Shenzhen, China (Field Office)
  • Hong Kong, China
  • Seoul, Korea
  • Taipei, Taiwan
  • Tokyo, Japan
  • Chennai, India
THE AMI ADVANTAGE

• AMI is a one-stop shop for all System Components and Management Tools
  • From Backplane Controllers to BIOS/UEFI Firmware, Remote Management to BMC Firmware

• Support integrated into each AMI solution
  • AMI takes a holistic approach across all product groups

American Megatrends Corporate Mission Statement:

AMI provides the highest quality products to its valued customers and partners – the first time, every time
AMI is the only firmware vendor to offer a complete array of end-to-end products to support the entire computing infrastructure.
Superior Validation - Worldwide

- Quality Assurance
  - Labs based in US, Taiwan, China & India
  - Using off-the-shelf equipment and AMI proprietary methods

- Chipset Validation
  - Work closely with major Si vendors to ensure full feature validation

- Common eModules across all markets
  - Validation and feedback from one improves all products

- Testing a Common UEFI Core for all Market Segments
RESPONDING TO CUSTOMER NEEDS

- **Comprehensive support** structure for demanding ecosystem
- Direct **engineer-to-engineer** support model
- Fully-featured bug and project tracking website called **Enterprise Information Portal** (EIP)
- Central catalog of all documents in **Customer Portal**
- **24/7 access** to AMI source trees via Subversion (SVN)
- **Customer training courses** for specific customer needs
DIRECT AND EFFECTIVE SUPPORT FROM AMI

- AMI **does not use** third parties or agents for support
- Customer engineers are **in direct contact** with AMI engineers
- Issues are resolved **quickly and effectively**
- **Identical support model** from all AMI offices worldwide
TRAINING TO ACCELERATE THE LEARNING PROCESS

• Training courses from AMI get our source license customers up and running quickly

• Typical courses are 3-5 days, based on customer needs and experience

• Topics covered are fully tailored to specific customer needs and expectations

• Training can be conducted at AMI Atlanta HQ or customer facility
  • Training at AMI HQ allows requested AMI engineers and staff can participate
  • If several customer engineers must attend, can be easier to conduct at customer site
BIOS AND UEFI FIRMWARE
AMI created Aptio to address OEM & ODM issues with BIOS / UEFI

- **Aptio delivers key advantages:**
  - Robust development tools for BIOS & UEFI
  - Drop-in BIOS features based on AMI eModules
  - Direct global support model

- **Quickly port** BIOS from CRB

- **Instant access** to Aptio docs & source code

- **Superior Aptio eModule framework:**
  - Add features from AMI’s source catalog or create eModules for custom features
• AMI invented the eModule in 2001
• eModules provide drop-in BIOS & UEFI features at the source level
  • Modular architecture for drop-in expansion
  • Add features on top of core
  • Make basic porting changes without touching source code
  • Implement custom features in your own eModules
  • Transfer OEM features easily from one project to another

• More than UEFI Driver Support …
• Modularity at the Functional Level
MODULAR BIOS COMPONENTS

• AMI Secure Firmware Implementation
  • Builds on Secure Boot & UEFI
  • Employs public/private key signing
    • Uses PKCS #7 hash
  • New Secure Flash process
    • NIST 800-147
  • UEFI authentication
    • Standard crypto protocols
    • EMSA PKCS v1.15, RSA-SSA PSS
    • 2048+bit RSA key, SHA256+ hash
SUPERIOR DEVELOPMENT ENVIRONMENT: VISUAL eBIOS

Designed Specifically for Aptio and UEFI Development

Key features include:

- **Purpose-built** for BIOS & UEFI porting, since 2001
- Integrated **project management** and **source control**
- Easy **PCI configuration** with PCI Wizard
- Simple modification of global project parameters for quick porting
APTIO EXTENSIBLE SETUP ARCHITECTURE (ESA)

- Provides better user experience
- Graphical setup environment with keyboard, mouse and touch support
- Easy OEM branding
BIOS / UEFI TOOLS & UTILITIES
SIMPLIFY DEBUG WITH AMIDEBUG™ TOOLS

**AMI Debug Rx**

- Handheld debug device connects to USB debug port
- Display BIOS checkpoints with text description of each checkpoint
- Store checkpoint session in device memory
- Measure time between each checkpoint and total boot time
- Access additional features via USB terminal

**AMI Debug for UEFI**

- Full source-level debug
- Debug integration with VeB or as a standalone application
- Does not need a JTAG
  - Use on production hardware, any CPU
  - Can be used with AMI Debug Rx
AMI ROM UTILITIES FOR BIOS MODIFICATIONS

No source code access? No problem! AMI has ROM utilities for that:

**AMIBCP**
- Edit setup & BIOS strings, option defaults and static SMBIOS data

**MMTool**
- Add, remove & replace option ROMs

**ChangeLogo**
- Change BIOS splash logos

**AMISDE**
- Archive configuration options for testing and release control

**DMIEdit**
- Provision SMBIOS data

**AMISCE**
- Use scripts to change setup options

**AMI Firmware Update (AFU)**
- UEFI Shell, Windows, Linux and FreeBSD

**AMIUCP**
- Modify behavior of AFU program
AMI EXTENSIBLE MANAGEMENT ARCHITECTURE

REMOTE BIOS

- AMI EMA defines a standardized way BIOS and BMC or BIOS and OData servers can communicate using the Redfish standard

- Features available through Remote BIOS include:
  - Remote BIOS update, PCIe firmware update, OS deployment
  - Remote Launch of AMIDiag and AMIRescue
  - Firmware, Boot Options, SecureBoot, TPM configuration
  - Hardware Inventory information
ADIAGNOSTIC TOOL FROM THE BIOS/UEFI LEADER

**AMIDiag for UEFI**
- Hardware burn-in & field testing - OS not required
- Run from disk, network boot or **embed in BIOS**
- Run batch and scripted tests
- Create and view error log files
- Add third party tests with AMIDiag for UEFI SDK

**Graphical AMIDiag**
- **Quick health test** for basic platform status
- Same tests as AMIDiag for UEFI
- Graphical user interface for touch / mouse
- Wizard provides guided system diagnostics for novice users
Remote BIOS

- Firmware configuration and updates, diagnostics and pre-OS applications in a UEFI environment
- Replace “recovery DVD” with and always available pre-boot management tool
- Execute from BIOS flash ROM, NAND flash, on-board USB, protected disk partitions or proprietary storage
FIRMWARE FOR GOOGLE CHROMEBOOK™

• AMI is a selected vendor for Chromebook porting
• AMI is the only IBV offering Chromebook development, working with multiple OEMs
• AMI training directly from Google
• Ready to work with OEMs on future projects
MEGARAC® BMC & REMOTE MANAGEMENT
MEGARAC – KEY BENEFITS AND ADVANTAGES

• Extendable Features
• Unbeatable Customization
• High Return on Investment (ROI)
• Low Total Cost of Ownership (TCO)
MEGARAC BMC & SERVER FIRMWARE

- Service Processor
- Chassis & Blade Management
- Redfish & Intel® RSD Solutions
- Intel® Innovation Engine Firmware
- Pod Management Software
- Virtual Desktop Infrastructure (VDI)
MegaRAC SP-X is a powerful server management solution featuring firmware and software components based on industry standards like IPMI 2.0, Restful APIs, SMASH, Serial over LAN (SOL). It offers key serviceability capabilities like remote presence, CIM profiles and advanced automation.

SP-X is available for nearly all of the latest System-On-Chip (SoC) designs from industry leaders including Aspeed and Renesas.
Megarac PM-X is a compact IPMI 2.0 and DCMI 1.5 firmware solution designed to support the Innovation Engine (IE) from Intel. It enables hardware manufacturers that leverage IE to create a comprehensive manageability solution without adding any glue-logic, SDRAM or components - other than a NIC on the server board.
MegaRAC CM-X is a robust Linux®-based firmware solution for modular server chassis management. It also fits nicely into microserver designs and rack-level management applications thanks to its a flexible framework and customization tools.
MegaRAC FP-X is powerful firmware / software stack that combines complete fabric management functionality with that of a BMC for full BMC management tasks, out-of-band connectivity and an advanced component management framework.
MEGARAC DEVELOPMENT STUDIO (DS)

Eclipse™-based integrated development environment (IDE) with plug-ins for packaging the core, sensor placement & simulation, GUI development, CIM and SMASH project management
Intel® Rack Scale Design (RSD) is an open framework that defines the standards for composing logical servers from disaggregated pools of storage, network and compute resources. MegaRAC solutions for RSD enable high efficiency for building, managing and improving cloud infrastructure in a software-defined data center.
AMI Composer Pod Management Software enables users to browse datacenter resources at the rack, chassis and system level through an intuitive web-based user interface. Compose and assign resources to create a logical node, for demand-driven dynamic scaling to optimize resource utilization.
AMI is a leader in NVMe/SAS/SATA Backplane Controller Chips (BPCs). Top manufacturers worldwide choose the MG Series BPCs from AMI for their outstanding versatility, value and performance.
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<th>Features</th>
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The wide variety of reference designs from AMI allows system builders to create an ideal system case solution.
AMI provides a wide variety of engineering services to customers around the globe, including **design services** for hardware, software and firmware solutions, **application development** and support, and **platform validation** and **testing services** at multiple AMI international locations for pre-launch quality and reliability testing.
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