



MMC-SDK

AMC MODULE MANAGEMENT CONTROLLER -
SOFTWARE DEVELOPER'S KIT

MICROBLADE[®]

MicroBlade™

www.microblade.us

608 729.5370

As today's systems become more complicated and more modular, the need to monitor the health of the system and track components becomes more critical to the success of a product. The AdvancedMC (AMC) and MicroTCA (μ TCA) specifications build this capability into the entire system by extending the industry standard Intelligent Platform Management Interface (IPMI) all the way down to the mezzanine level.

The Module Management Controller (MMC) is the backbone of system management on an AMC module. It is responsible for monitoring the module's health, coordinating the module's operational state with its carrier, and for storing the module's inventory information. As the MMC is a stand-alone controller running on its own power supply, all of these diagnostic capabilities are present even when the module's main function is non-operational or failed.

MicroBlade's MMC Software Development Kit (SDK) accelerates your AMC module and μ TCA system development by providing HDL and C-language source-code for an MMC implemented in the Actel AFS600 device. The MMC SDK provides all of the components need to implement a fully-functional MMC with sensor monitoring, sensor error reporting, inventory information storage, and payload state management. Since you have the HDL and C-language source-code, you can easily expand your design however you need, including adding new sensors and sensor types, and customized inventory information.

Features at a glance:

- > C-language source-code for the Actel Core8051™
- > HDL source-code for the Actel Fusion® AFS600
- > Lynx Load Module implementing the MMC reference design
- > Board design package for the Lynx Load Module

FEATURE DETAILS

- > Software source code for MMC
- > C-language source-code for the Actel Core8051™ implementing the IPMB-L driver, IPMI protocol stack, sensor management, event generation, inventory information storage, and custom control of the Lynx Load Module.
- > Board design package for the Lynx Load Module including full schematics, bill of materials, and assembly drawings.
- > HDL source-code for the Actel Fusion® AFS600 implementing the 8051 microcontroller, UART interface for diagnostics, I2C interface for IPMB-L, non-volatile memory for application and data storage, and PWM controller for control of the Lynx Load Module.
- > USB diagnostic cable for accessing the MMC command line interface.
- > Thumb drive containing all source-code, documentation, and free tools.

HARDWARE DETAILS

- > Hot-Swappable
- > 0 – 100 Watts in a full-size or mid-size AMC module
- > 0 – 40 Watts in a compact-size AMC module
- > Programmable Load Module
 - Front-panel two-way toggle switch to adjust load
 - Diagnostic commands to adjust load
 - IPMI commands to adjust load
 - LED bar graph to indicate load
 - Maximum load set by the AMC Module Current record
 - Maximum load over-ride to allow current-limit testing
 - Load setting persistent across power-cycles
- > Diagnostic Information
 - Inlet air temperature sensor
 - Hot-part temperature sensor
 - Payload voltage sensor
 - Management voltage sensor
- > Robust Thermal Design
 - Low Resistance to Airflow
 - Inlet Air Temperature sensor
 - Hot Part Temperature sensor
 - 19% max Component Cross-sectional Area
 - Load Resistor lay-out provides enhanced heat transfer
 - 10°C temperature rise w 17 CFM & 100W
 - 70°C operation with reduced MTBF
- > In-system upgradeable
 - MMC firmware may be upgraded through the front-panel diagnostic port or through the front-panel JTAG interface without needing to remove the module.
 - MMC HDL may be upgraded through the front-panel JTAG interface, simplifying development of custom HDL functionality without needing to remove the module.

REQUIREMENTS

- > Additional software*
 - Keil™ PK51 Professional Developer's Kit
 - Actel Libero® Integrated Design Environment
 - Actel CoreConsole IP Deployment Platform
- > Additional hardware
 - Actel FlashPro3 Device Programmer
 - Windows-based workstation with at least one USB port

** Customers are responsible to obtain appropriate software licensing*



MicroBlade®
567 D'Onofrio Drive
Suite 150
Madison, WI 53719

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