



Pigeon Point Systems

World-Class Management Solutions for xTCA™ Platforms





When it comes to implementing Telecommunications Computing Architecture (xTCA) hardware platform management solutions, most hardware product vendors prefer to bypass the hassle of custom building a solution and select an existing proven solution instead. Pigeon Point Systems, as the dominant supplier of these solutions to leading companies worldwide, is by far the best choice. In addition to shipping in tens of thousands of boards and shelves and being thoroughly validated by the largest telecom equipment manufacturers, Pigeon Point solutions have been systematically tested in dozens of PICMG® xTCA interoperability workshops since 2002, making them the standard against which other implementations are measured for xTCA interoperability.

The Pigeon Point solutions include Board Management Reference (BMR) Starter Kits based on the Actel SmartFusion™ intelligent mixed signal FPGA and Fusion mixed signal FPGA as well as Renesas Technology H8S and Atmel AVR® microcontrollers, plus Shelf Management Mezzanine (ShMM) modules, which provide the core processing and firmware for an AdvancedTCA® (ATCA) Shelf Manager. The SmartFusion-based solutions support the A2F500 and A2F200 devices, while the Fusion-based solutions support the Pigeon Point enabled P1AFS1500 and P1AFS600 Fusion devices.

When implementing robust and fully compliant hardware platform management solutions for “always up” hardware, you can do things the Hard Way or the Pigeon Point Way.

The Pigeon Point Way covers all of the xTCA management controller types:

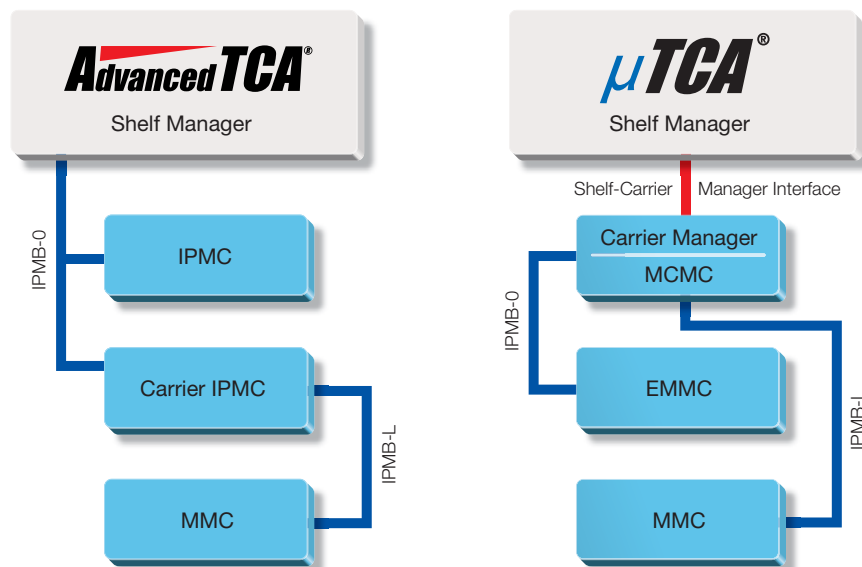


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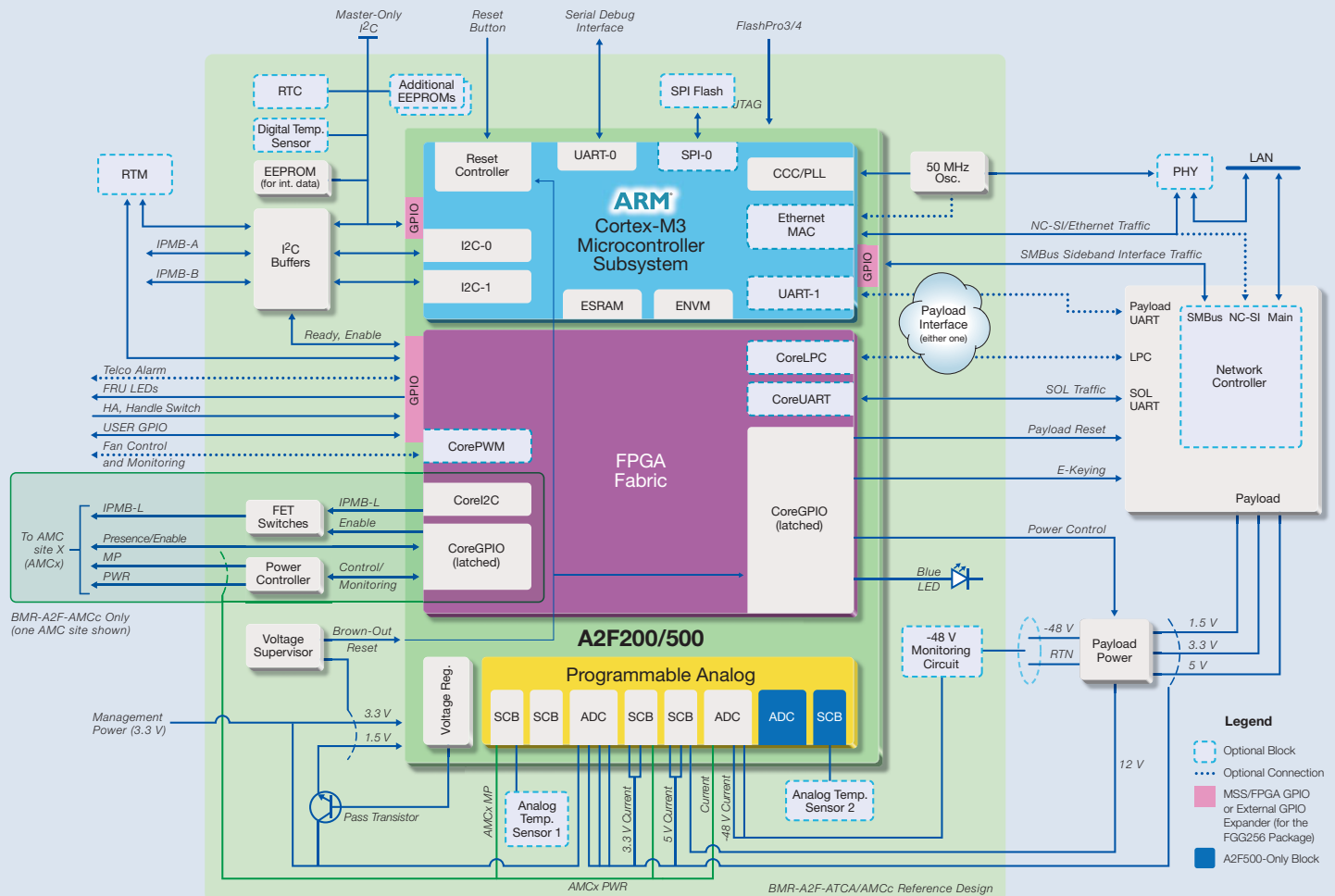
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Leveraging SmartFusion's Intelligent Integration for IPM Controllers

Hard-logic-implemented, cost-effective, high performance microcontroller subsystem based on 32-bit ARM® Cortex™-M3

Optimizations for xTCA management via flash FPGA fabric, with tiles available for additional board-specific functions

Advanced analog monitoring with zero load on Cortex-M3 for analog processing



Key Functional Benefits Enabled by Microcontroller Subsystem

- 32-bit Cortex-M3 operates at 80 MHz, supporting advanced processing such as for network protocols
- 10/100 Mbps Ethernet, with Reduced Media Independent Interface (RMII)
 - Compatible with Network Controller Sideband Interface (NC-SI) standard for vendor- and controller-independent sideband Ethernet
 - Enables operations and development cost reductions, via serial traffic, firmware upgrade, IPMB trace over LAN
- Platform for future support of in-application programming for flash FPGA fabric

Key Functional Benefits Enabled by Flash FPGA Fabric

- IPMI System Interface via CoreLPC facilitates off-the-shelf IPMI stacks on payload
- Additional AHB peripherals (e.g., CoreUART) accessed via CoreLPC from payload can replace external devices
- Latched CoreGPIO for payload controls eliminates external latch device
- Extra I2C ports via CoreL2C improve performance, robustness for IPMB-L to AMCs
- Custom logic, replacing PLD(s) or other on-board devices

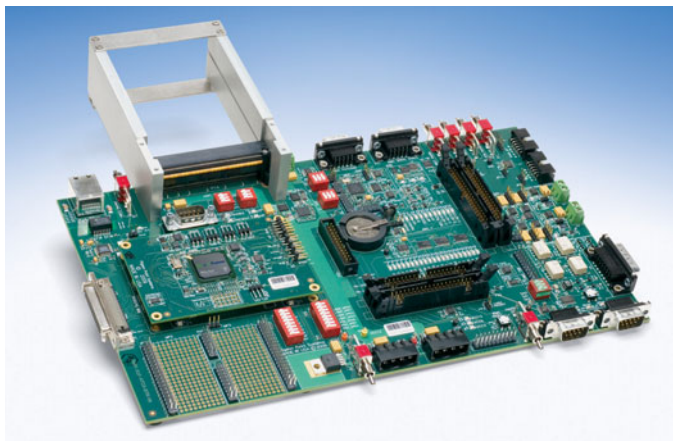
Key Functional Benefits of Programmable Analog

- Analog Compute Engine (ACE) offloads Cortex-M3 from analog processing
- Option to augment IPMI analog sensors with board-specific analog signal handling, with unified configuration via MSS configurator
- Ability to monitor up to 32 analog sensors, overall
- Platform for future support of additional advanced analog processing, such as voltage threshold based power rail sequencing

Pigeon Point AdvancedTCA/AdvancedMC Board Management Reference Products

IPMC

SmartFusion Board Management Reference Starter Kit for AdvancedTCA IPM Controllers



BMR-A2F-ATCA-SK: a complete solution for implementing a compliant and interoperable IPM Controller (IPMC), including:

- Complete Actel Libero® Integrated Design Environment (IDE) design for SmartFusion intelligent mixed signal FPGA
- Schematics and bill-of-materials for SmartFusion-based IPMC
- Comprehensive user's guide, hardware architecture and software architecture documents
- Pigeon Point IPMC firmware, including source code and development tools, supporting all mandatory and many optional Intelligent Platform Management Interface (IPMI)/ATCA commands, plus numerous PPS extension commands

- **BMR-A2F-ATCA-BTR** benchtop board
- Pigeon Point ShMM-500R-based benchtop Shelf Manager, which can be cabled together with ATCA benchtop board to form a two-node (or larger) benchtop ATCA IPMI network, enabling you to begin ramping up on AdvancedTCA's IPMI-based management framework without waiting for your custom hardware

BMR-A2F-ATCA-BTR AdvancedTCA/AdvancedMC (AMC) benchtop development board, including:

- Mezzanine-implemented SmartFusion core IPMC for flexibility
 - Mezzanine modules available for 256-pin or 484-pin IPMC implementations
- LEDs and switches for configuration, state signaling, and control, plus robust selection of headers and connectors

- On-board dedicated prototyping area
- RoHS compliant

Additional hardware to support use of the BMR-A2F-ATCA-BTR benchtop board with the add-on facilities of the BMR-A2F-AMC Carrier IPMC solution (see next entry):

- AMC slot with connector and guide to attach a customer AMC for development and testing
- Complete on-board AVR-based Module Management Controller (MMC) simulating a second AMC site
- Connection for an AMC Test Site Board (AMC-TSB) to connect an additional customer-supplied AMC module

- AMC-TSB available separately

Ordering Code	Supported Devices
BMR-A2F-ATCA-SK <i>Ships with 484-pin A2F500 by default, 256-pin A2F500 if requested, subject to availability; A2F200 shipped in lieu of A2F500 initially.</i>	A2F200M3F A2F500M3G

Carrier IPMC

SmartFusion Board Management Reference Starter Kit Add-On for AdvancedMC Carrier IPM Controllers

BMR-A2F-AMC-SKA: augments the BMR-A2F-ATCA-SK Starter Kit to enable development of compliant and interoperable Carrier IPM Controllers (Carrier IPMCs), including:

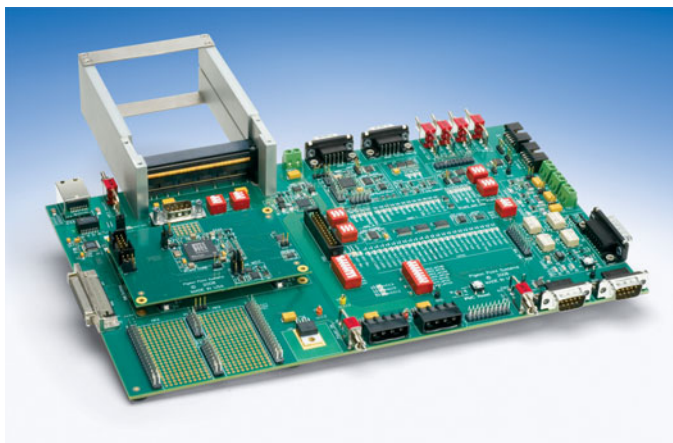
- Augmented Libero IDE design for a complete SmartFusion-based Carrier IPMC
- Augmented schematics and bill-of-materials for SmartFusion-based Carrier IPMC hardware
- Benchtop Shelf Manager and Carrier IPMC hardware (from the separately purchased BMR-A2F-ATCA-SK); see previous listing for details

- Comprehensive user's guide, hardware architecture and software architecture documents
- Pigeon Point Carrier IPMC firmware, including source code and development tools, supporting all mandatory and many optional IPMI/ATCA commands, plus numerous PPS extension commands

Ordering Code	Supported Devices
BMR-A2F-AMC-SKA	A2F200M3F A2F500M3G

IPMC

Fusion Board Management Reference Starter Kit for AdvancedTCA IPM Controllers



BMR-P1AFS-ATCA-SK: a complete solution for implementing a compliant and interoperable IPM Controller (IPMC), including:

- Complete Actel Libero IDE design for Fusion mixed signal FPGA
- Schematics and bill-of-materials for Fusion-based IPMC
- Comprehensive user's guide, hardware architecture and software architecture documents
- Pigeon Point IPMC firmware, including source code and development tools, supporting all mandatory and many optional Intelligent Platform Management Interface (IPMI)/ATCA commands, plus numerous PPS extension commands

- **BMR-P1AFS-ATCA-BTR** benchtop board
- Pigeon Point ShMM-500R-based benchtop Shelf Manager, which can be cabled together with ATCA benchtop board to form a two-node (or larger) benchtop ATCA IPMI network, enabling you to begin ramping up on AdvancedTCA's IPMI-based management framework without waiting for your custom hardware

BMR-P1AFS-ATCA-BTR AdvancedTCA/AdvancedMC (AMC) benchtop development board, including:

- Mezzanine-implemented Fusion core IPMC for flexibility
 - Mezzanine modules available for 256-pin or 484-pin IPMC implementations (the latter supporting external SRAM)
- LEDs and switches for configuration, state signaling, and control, plus robust selection of headers and connectors
- On-board dedicated prototyping area
- RoHS compliant

Additional hardware to support use of the **BMR-P1AFS-ATCA-BTR** benchtop board with the add-on facilities of the **BMR-P1AFS-AMCc** Carrier IPMC solution (see next entry):

- AMC slot with connector and guide to attach a customer AMC for development and testing
- Complete on-board AVR-based Module Management Controller (MMC) simulating a second AMC site
- Connection for an AMC Test Site Board (AMC-TSB) to connect an additional customer-supplied AMC module
 - AMC-TSB available separately

Ordering Code	Supported Devices
BMR-P1AFS-ATCA-SK (ships with 484-pin P1AFS1500 by default, 256-pin P1AFS1500 if requested)	P1AFS600-2 P1AFS1500-2

Carrier IPMC

Fusion Board Management Reference Starter Kit Add-On for AdvancedMC Carrier IPM Controllers

BMR-P1AFS-AMCc-SKA: augments the **BMR-P1AFS-ATCA-SK** Starter Kit to enable development of compliant and interoperable Carrier IPM Controllers (Carrier IPMCs), including:

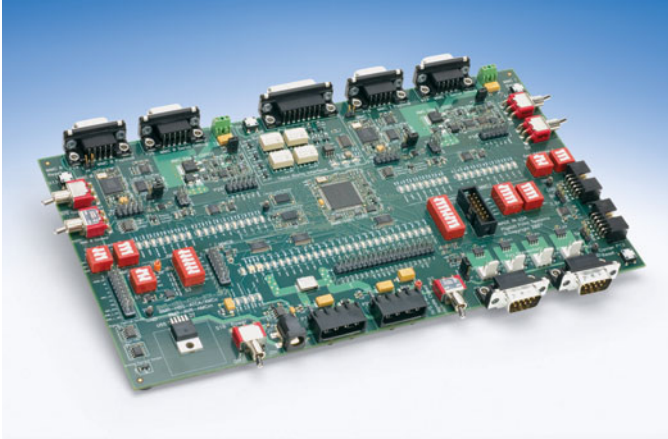
- Augmented Libero IDE design for a complete Fusion-based Carrier IPMC
- Augmented schematics and bill-of-materials for Fusion-based Carrier IPMC hardware
- Benchtop Shelf Manager and Carrier IPMC hardware (from the separately purchased **BMR-P1AFS-ATCA-SK**); see previous listing for details

- Comprehensive user's guide, hardware architecture and software architecture documents
- Pigeon Point Carrier IPMC firmware, including source code and development tools, supporting all mandatory and many optional IPMI/ATCA commands, plus numerous PPS extension commands

Ordering Code	Supported Devices
BMR-P1AFS-AMCc-SKA	P1AFS600-2FGG484 P1AFS1500-2FGG484

IPMC

BMR-H8S-ATCA-SK Board Management Starter Kit for AdvancedTCA IPM Controllers



A complete hardware and firmware solution for the mandatory IPM Controller on AdvancedTCA boards and other intelligent FRUs, such as fan trays or power entry modules (PEMs). Kit includes:

- Schematics for a complete IPM Controller subsystem, ready for integration/adaptation into the design of your board or other intelligent field replaceable unit (FRU) such as a fan tray or PEM
- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product
- Benchtop Shelf Manager and IPM Controller hardware so that you can immediately begin the ramp-up process on AdvancedTCA's IPMI-based management framework, without waiting for your custom hardware

Ordering Code	Core Silicon
BMR-H8S-ATCA-SK	H8S

Carrier IPMC

BMR-H8S-AMCc-SKA Board Management Starter Kit Add-On for AdvancedMC Carrier IPM Controllers

Augments the Pigeon Point BMR-H8S-ATCA IPM Controller solution with the additional hardware and firmware needed to implement a Carrier IPMC on an AMC carrier board. Kit includes:

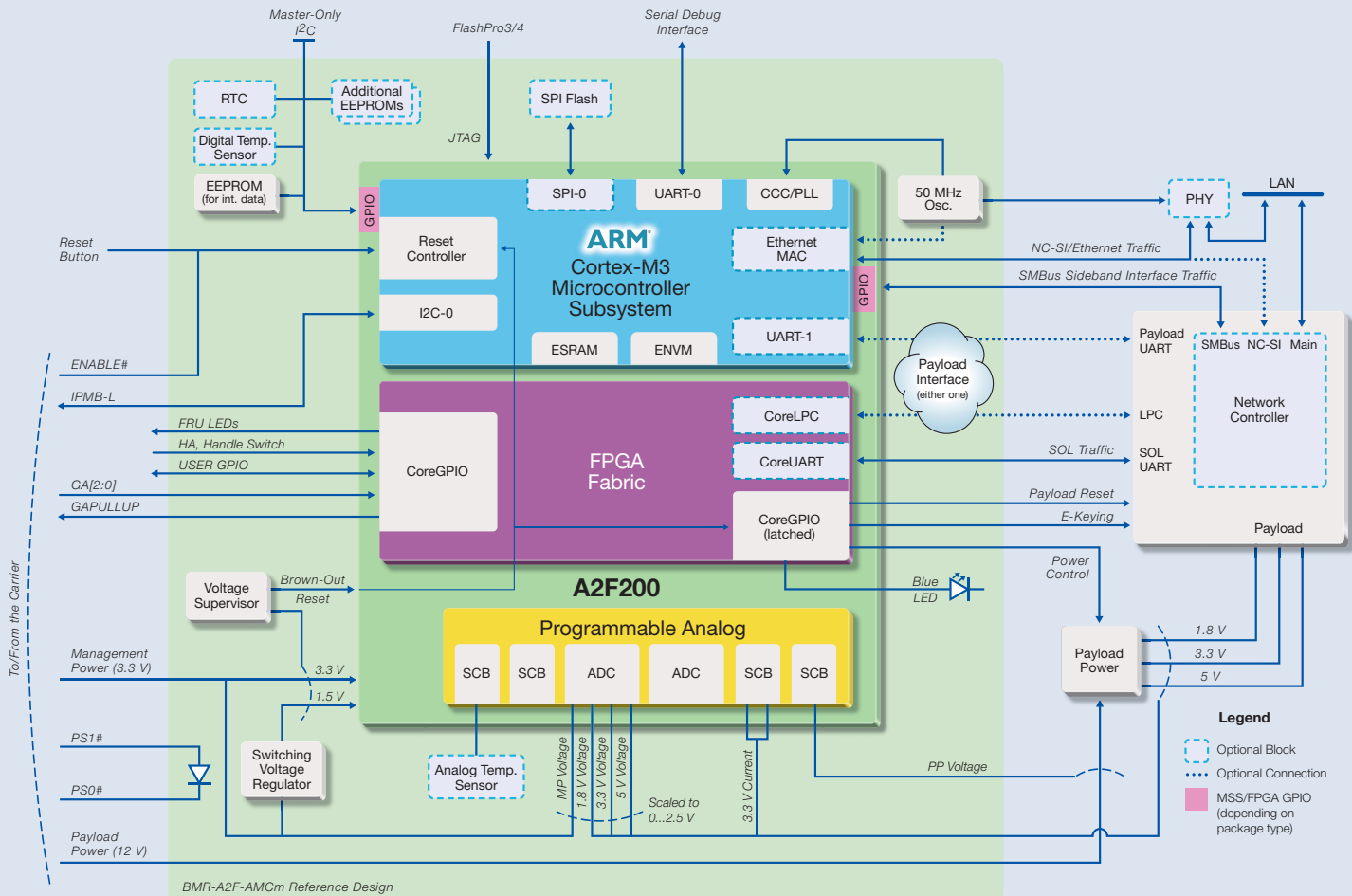
- Augmented schematics covering Carrier IPMC hardware, ready for integration/adaptation into the design of your ATCA-based AMC carrier board
- Corresponding Carrier IPMC firmware, delivered in source form—ready for simple and quick adaptation to the specific requirements of your product

- Benchtop Shelf Manager and Carrier IPMC hardware (from the separately purchased BMR-H8S-ATCA Starter Kit), allowing you to ramp up on IPMI-based management without waiting for your custom hardware

Ordering Code	Core Silicon
BMR-H8S-AMCc-SKA	H8S

Leveraging SmartFusion's Intelligent Integration for Module Management Controllers

- Hard-logic-implemented, cost-effective, high performance microcontroller subsystem based on 32-bit ARM Cortex-M3
- Optimizations for xTCA management via flash FPGA fabric, with tiles available for additional board-specific functions
- Advanced analog monitoring with zero load on Cortex-M3 for analog processing



Key Functional Benefits Enabled by Microcontroller Subsystem

- 32-bit Cortex-M3 operates at 40 MHz, supporting advanced processing such as for network protocols
- 10/100 Mbps Ethernet, with Reduced Media Independent Interface (RMII)
 - Compatible with Network Controller Sideband Interface (NC-SI) standard for vendor- and controller-independent sideband Ethernet
 - Enables operations and development cost reductions, via serial traffic, firmware upgrade, IPMB trace over LAN
- Platform for future support of in-application programming for flash FPGA fabric

Key Functional Benefits Enabled by Flash FPGA Fabric

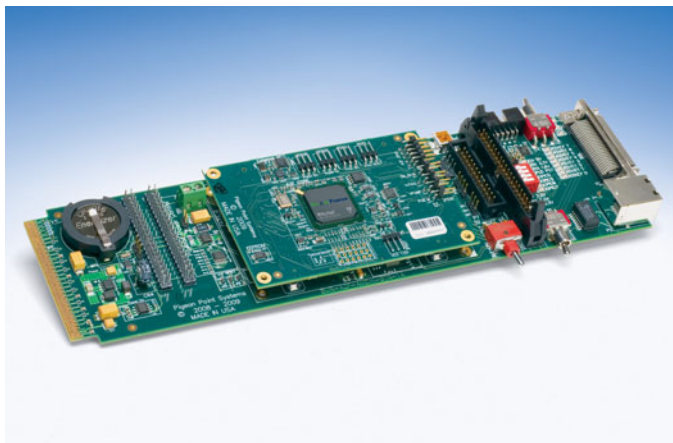
- IPMI System Interface via CoreLPC facilitates off-the-shelf IPMI stacks on payload
- Additional AHB peripherals (e.g., CoreUART) accessed via CoreLPC from payload can replace external devices
- Latched CoreGPIO for payload controls eliminates external latch device
- Custom logic, replacing PLD(s) or other on-board devices

Key Functional Benefits of Programmable Subsystem

- Analog Compute Engine (ACE) offloads Cortex-M3 from analog processing
- Option to augment IPMI analog sensors with board-specific analog signal handling, with unified configuration via MSS configurator
- Ability to monitor up to 32 analog sensors, overall
- Platform for future support of additional advanced analog processing, such as voltage threshold based power rail sequencing

MMC

BMR-A2F-AMCm Board Management Starter Kit for AdvancedMC Module Management Controllers in AdvancedTCA Contexts



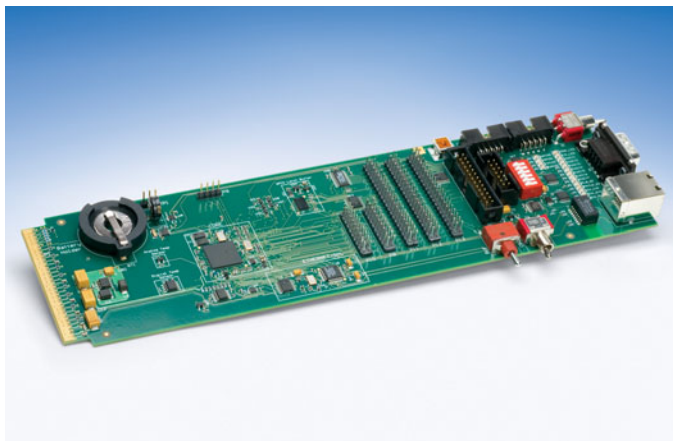
A complete hardware and firmware solution for the mandatory MMC on AMC modules, compatible with either ATCA carriers or MicroTCA shelves, but with AdvancedTCA benchtop support. Kit includes:

- Complete Actel Libero IDE design for SmartFusion intelligent mixed signal FPGA
- Schematics for a complete SmartFusion-based MMC subsystem, ready for integration/adaptation into the design of your AMC
- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product
- Benchtop SmartFusion-based MMC, implemented as AMC form factor board that can be inserted in any compliant AMC slot, with debug facilities extending in front of the carrier
- Benchtop AdvancedTCA Shelf Manager, SmartFusion-based Carrier IPM Controller (Carrier IPMC), so that you can immediately begin the ramp-up process on the IPMI-based management framework of the AdvancedTCA and AdvancedMC specifications, without waiting for custom hardware

Ordering Code	Core Silicon
BMR-A2F-AMCm-SK-ATCA	A2F200M3F

MMC

BMR-H8S-AMCm Board Management Starter Kit for AdvancedMC Module Management Controllers in AdvancedTCA Contexts



A complete hardware and firmware solution for the mandatory MMC on AMC modules, compatible with either ATCA carriers or MicroTCA shelves, but with AdvancedTCA benchtop support. Kit includes:

- Schematics for a complete MMC subsystem, ready for integration/adaptation into the design of your AMC
- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product
- Benchtop MMC, implemented as AMC form factor board that can be inserted in any compliant AMC slot, with debug facilities extending in front of the carrier
- Benchtop AdvancedTCA Shelf Manager, Fusion-based Carrier IPM Controller (Carrier IPMC), so that you can immediately begin the ramp-up process on the IPMI-based management framework of the AdvancedTCA and AdvancedMC specifications, without waiting for custom hardware

Ordering Code	Core Silicon
BMR-H8S-AMCm-SK-ATCA	H8S

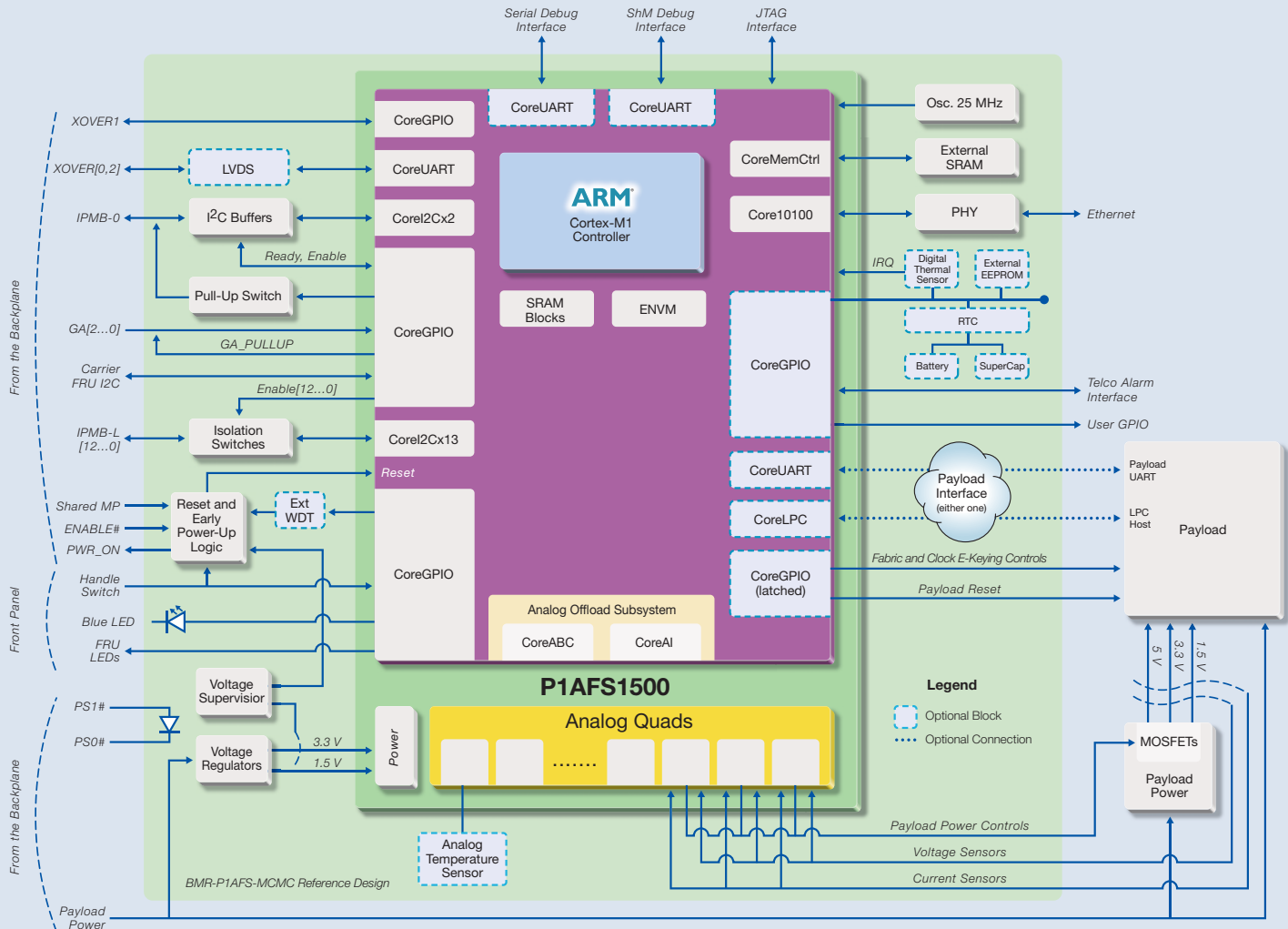
A corresponding AdvancedMC MMC solution based on the Atmel AVR microcontroller is also available. Please contact Pigeon Point Systems for details.

Leveraging Fusion Mixed Signal FPGAs for MicroTCA Carrier Management Controllers

Soft-core-implemented, 32-bit Cortex-M1 processor in FPGA fabric, attached to soft core peripheral blocks

Soft cores in flash FPGA fabric provide basic functions and optimizations for xTCA management, with tiles available for board-specific functions

Soft-core-implemented analog offload subsystem works with zero load on Cortex-M1, interfacing with hard-logic-implemented analog quads



Key Functional Benefits Enabled by Soft Controller Subsystem

- 32-bit ARM Cortex-M1 core operates at 33.3 MHz
- Data in external SRAM, supplemented by FPGA SRAM blocks
- Executable code and configuration data stored on-chip in 1 MB of ENVM

Key Functional Benefits Enabled by Flash FPGA Fabric

- Extensive soft core integration replaces numerous off-chip devices needed with conventional microcontroller
- Separate I²C channels for all 13 IPMB-L legs as well as IPMB-0 helps performance, robustness
- IPMI System Interface via CoreLPC enables generic IPMI stack on payload
- Latched CoreGPIO for payload controls eliminates external latch device
- Custom logic, replacing PLD(s) or other on-board devices

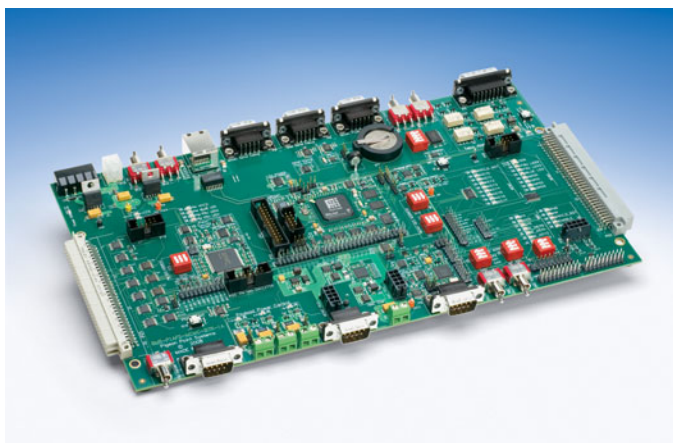
Key Functional Benefits of Analog Subsystem

- Soft core analog offload subsystem does IPMI- and xTCA-aware analog sensor threshold processing without requiring any cycles from the Cortex-M1
- Hard-logic-implemented analog quads provide analog front-end facilities for measuring voltages, currents, temperatures
- Ability to monitor up to 30 analog sensors, overall

Pigeon Point MicroTCA/AdvancedMC Board Management Reference Products

MCMC

Fusion Board Management Starter Kit for MicroTCA Carrier Management Controllers



A complete solution for implementing a MicroTCA Carrier Management Controller (MCMC) subsystem, including the Pigeon Point μ Carrier Manager™ and Pigeon Point μ Shelf Manager™. Kit Includes:

- Complete Libero IDE design for Fusion mixed signal FPGA
- Schematics and bill-of-materials for a complete MCMC, ready for integration into your MicroTCA Carrier Hub (MCH)
- Firmware in source form for ARM Cortex-M1 processor, supporting all mandatory and many optional IPMI/MicroTCA commands
- Comprehensive user's guide, hardware architecture and software architecture documents

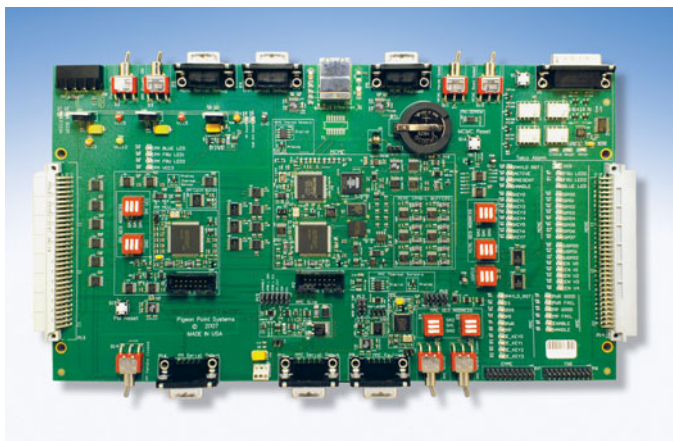
Benchtop development board, including:

- BMR-P1AFS-MCMC reference implementation, complete with μ Shelf Manager
- On-board AdvancedMC Module Management Controller (MMC) based on the Pigeon Point BMR-AVR-AMCm reference design
- On-board emulated minimal command set Power Module Enhanced Module Management Controller (EMMC)
- Rich collection of headers, switches, and connectors
- Connections for optional Pigeon Point AMC Test Site Board and Power Module Test Site board to enable testing with user-supplied AMC or up to two Power Modules
- RoHS compliant

Ordering Code	Supported Devices
BMR-P1AFS-MCMC-SK	P1AFS1500-2FGG484

MCMC

BMR-H8S-MCMC-SK Board Management Starter Kit for MicroTCA Carrier Management Controllers



A complete hardware and firmware solution for the mandatory MicroTCA Carrier Management Controller (MCMC) on a MicroTCA Carrier Hub (MCH), which includes the MCMC, Carrier Manager, and an optionally installed Shelf Manager, all executing on a single microcontroller. Kit includes:

- Schematics for a complete MCMC subsystem (including Pigeon Point μ Carrier Manager and Pigeon Point μ Shelf Manager), ready for integration/adaptation into the design of your MicroTCA Carrier Hub (MCH)

- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product and configurable to execute on a single Renesas H8S/2166 controller
- Benchtop MCMC and supporting hardware so that you can immediately begin the ramp-up process on the MicroTCA IPMI-based management framework, without waiting for your custom hardware

Ordering Code	Core Silicon
BMR-H8S-MCMC-SK	H8S

Pigeon Point MicroTCA/AdvancedMC Board Management Reference Products (cont.)

MMC

BMR-A2F-AMCm Board Management Starter Kit for AdvancedMC Module Management Controllers in MicroTCA Contexts

A complete hardware and firmware solution for the mandatory MMC on AMC modules, compatible with either ATCA carriers or MicroTCA shelves, but with MicroTCA benchtop support. Kit includes:

- Complete Actel Llibero IDE design for SmartFusion intelligent mixed signal FPGA
- Benchtop SmartFusion-based MMC, implemented as AMC form factor board that can be inserted in any compliant AMC slot (including in a MicroTCA shelf), with debug facilities extending in front; see AdvancedTCA context listing on pages 8 and 9 for an extensive block diagram of this reference design and a photo of the corresponding benchtop board
- Schematics for a complete SmartFusion-based MMC subsystem, ready for integration/adaptation into the design of your AMC

- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product
- Fusion-based benchtop MicroTCA Shelf Manager and Carrier Manager, plus an AMC Test Site Board, so that you can immediately begin the ramp-up process on the IPMI-based management framework of the MicroTCA and AdvancedMC specifications, without waiting for custom hardware

Ordering Code	Core Silicon
BMR-A2F-AMCm-SK-μTCA	A2F200M3F

MMC

BMR-H8S-AMCm Board Management Starter Kit for AdvancedMC Module Management Controllers in MicroTCA Contexts

A complete hardware and firmware solution for the mandatory MMC on AMC modules, compatible with either ATCA carriers or MicroTCA shelves, but with MicroTCA benchtop support. Kit includes:

- Benchtop MMC, implemented as AMC form factor board that can be inserted in any compliant AMC slot (including in a MicroTCA shelf), with debug facilities extending in front; see AdvancedTCA context listing on page 9 for photo of BMR-H8S-AMCm benchtop board
- Schematics for a complete MMC subsystem, ready for integration/adaptation into the design of your AMC
- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product

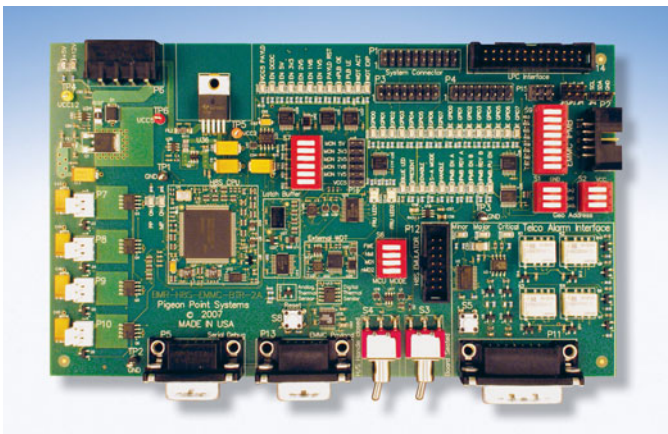
- Fusion-based benchtop MicroTCA Shelf Manager and Carrier Manager, plus an AMC Test Site Board, so that you can immediately begin the ramp-up process on the IPMI-based management framework of the MicroTCA and AdvancedMC specifications, without waiting for custom hardware

Ordering Code	Core Silicon
BMR-H8S-AMCm-SK-μTCA	H8S

A corresponding AdvancedMC MMC solution based on the Atmel AVR microcontroller is also available. Please contact Pigeon Point Systems for details.

EMMC

BMR-H8S-EMMC-SK Board Management Starter Kit for MicroTCA Enhanced Module Management Controllers



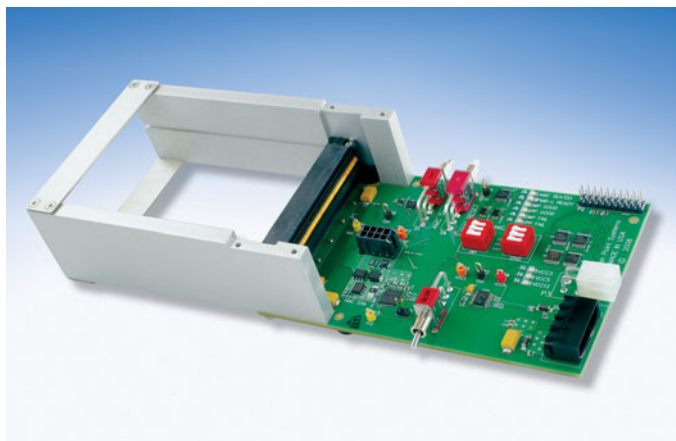
A complete hardware and firmware solution for the mandatory Enhanced Module Management Controller (EMMC) on MicroTCA modules such as OEM modules or cooling units. Kit includes:

- Schematics for a complete EMMC subsystem, ready for integration/adaptation into the design of your MicroTCA module, such as a cooling unit or OEM module
- Firmware for that subsystem, delivered in source form and with development tools—ready for simple and quick adaptation to the specific requirements of your product
- Benchtop EMMC and supporting hardware so that you can immediately begin the ramp-up process on MicroTCA's IPMI-based management framework, without waiting for your custom hardware
- BMR-H8S-EMMC-SK includes benchtop MCMC board

Ordering Code	Core Silicon
BMR-H8S-EMMC-SK	H8S

Pigeon Point Test Board Products

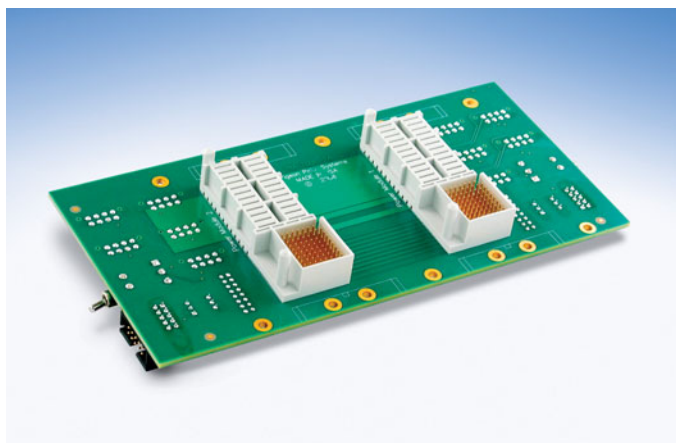
Test Board AMC Test Site Board



- Can be cabled to the BMR-P1AFS-MCMC benchtop board to allow connecting a physical AMC supplied by customer
- Can be connected to other BMR benchtop boards such as the Fusion ATCA board (BMR-P1AFS-ATCA-BTR) to attach a physical AMC
- Contact Pigeon Point Systems for specific additional AMC-TSB compatible boards
- Management and payload power for the attached AMC drawn from separate ATX +12 V feed

Ordering Code	Price
AMC-TSB	Contact Pigeon Point Systems

Test Board Power Module Test Site Board



- Can be cabled to the BMR-P1AFS-MCMC benchtop board to allow connecting up to two physical Power Modules (PMs)
- Allows powering key parts of benchtop configuration (including MCMC and the emulated and actual AMCs) from the PMs
- Implements PM interconnects typically provided by a MicroTCA backplane

Ordering Code	Price
PM-TSB	Contact Pigeon Point Systems

Pigeon Point AdvancedTCA Shelf Management Products

ATCA Shelf Manager

ShMM-500R Shelf Management Mezzanine



- AdvancedTCA Shelf Manager core in SO-DIMM form factor
 - 333 MHz MIPS® processor, the NetLogic Microsystems Au1550™
 - 64 or 128 MB of SDRAM
 - 32 or 64 MB of flash for program and data storage (configured with 64 and 128 MB of SDRAM, respectively)
 - Two copies of key partitions to support reliable upgrades
 - Dual IPMB, Ethernet, and serial interfaces
 - 67.60 mm x 50.80 mm fully compliant SODIMM mechanicals
 - Maximum power less than 5 W at 3.3 V
- Includes Pigeon Point Shelf Manager firmware and Monterey Linux, pre-loaded in flash
 - When integrated with a suitable carrier, ShMM-500R complies with PICMG 3.0 R3.0 and IPMI v1.5, document revision 1.1, plus relevant errata and selected extensions from IPMI 2.0
 - Thoroughly tested at PICMG xTCA interoperability workshops
 - Pigeon Point ShMMs manage tens of thousands of ATCA shelves throughout the world and have been extensively and successfully tested by major network equipment providers

Ordering Codes	Core Silicon
ShMM-500R-333M32F64R ShMM-500R-333M64F128R	Au1550

ATCA Shelf Manager

ShMM-1500R Shelf Management Mezzanine

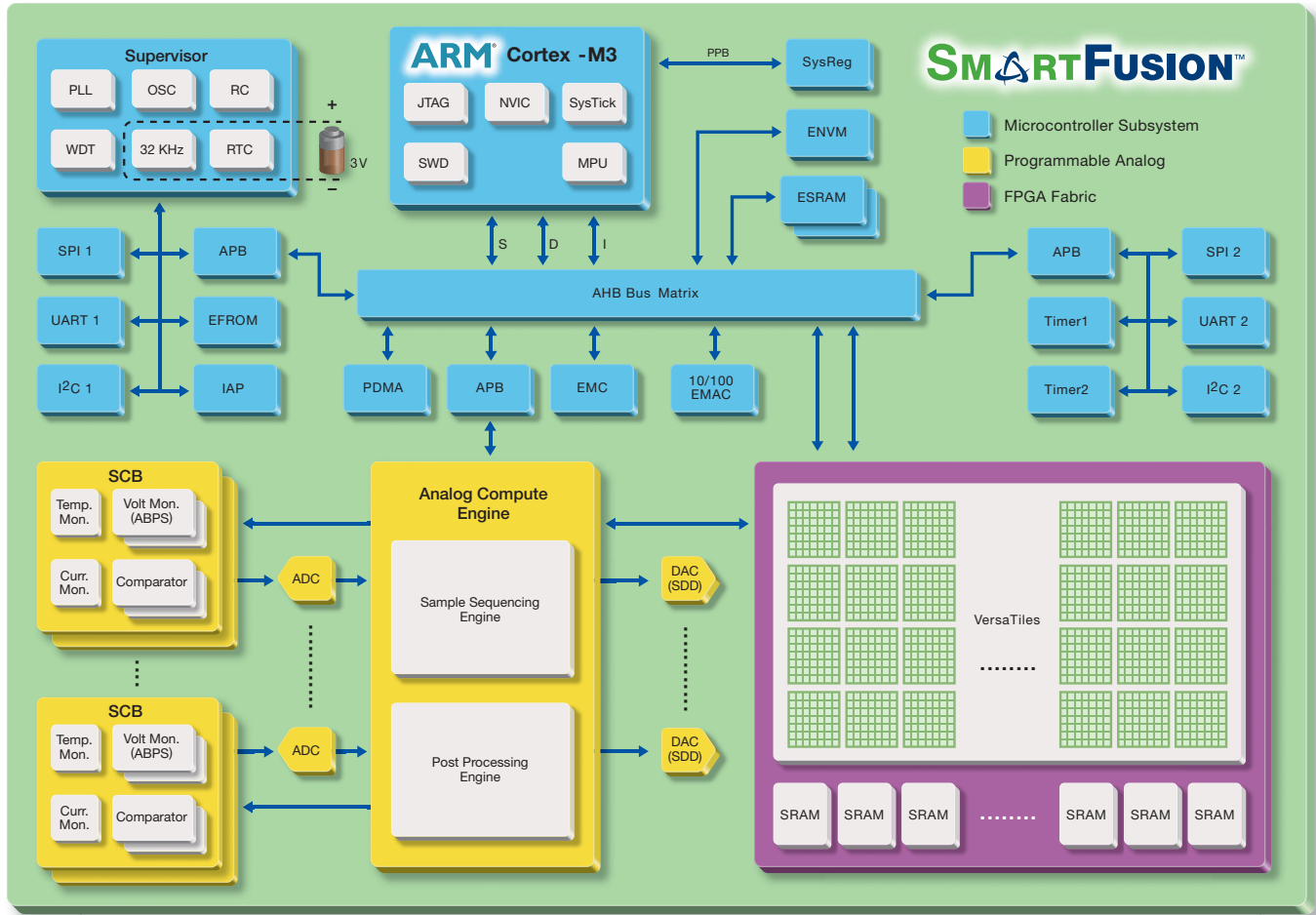


- AdvancedTCA Shelf Manager core in mezzanine form factor
 - 250 MHz superscalar PowerPC® processor, the Freescale™ MPC8343
 - 64 or 128 MB of SDRAM
 - 32 or 64 MB of flash for program and data storage (configured with 64 and 128 MB of SDRAM, respectively)
 - Two copies of key partitions to support reliable upgrades
 - Dual IPMB, Ethernet, and serial interfaces
 - 92.0 mm x 50.80 mm mezzanine
 - Maximum power less than 6.3 W at 3.3 V
- Includes Pigeon Point Shelf Manager firmware and Monterey Linux, pre-loaded in flash
 - When integrated with a suitable carrier, ShMM-1500R complies with PICMG 3.0 R3.0 and IPMI v1.5, document revision 1.1, plus relevant errata and selected extensions from IPMI 2.0
 - Thoroughly tested at PICMG xTCA interoperability workshops
 - Pigeon Point ShMMs manage tens of thousands of ATCA shelves throughout the world and have been extensively and successfully tested by major network equipment providers

Ordering Codes	Core Silicon
ShMM-1500R-250M32F64R ShMM-1500R-250M64F128R	MPC8343

SmartFusion Architecture

Along with microcontroller (MCU), FPGA and analog, SmartFusion intelligent mixed signal FPGAs integrate substantial flash and SRAM memory and comprehensive clock generation and management circuitry. SmartFusion architecture enables data storage and execution of code from a single monolithic device. In addition, in-application programming (IAP) enables real-time updates and reprogramming of the complete chip. Design compromises that were inevitable with traditional fixed-function microcontrollers and FPGAs are eliminated when designing with SmartFusion devices.



No-Compromise Microcontroller Subsystem (MSS)	Programmable Analog	No-Compromise FPGA Fabric
<ul style="list-style-type: none"> Hardwired industry-standard 100 MHz, 32-bit ARM Cortex-M3 CPU Multi-layer AHB communication matrix with up to 16 Gbps throughput 10/100 Ethernet MAC with RMII interface Two of each: SPI, I2C, UART, 32-bit timers Up to 512 KB flash and 64 KB of SRAM External memory controller (EMC) 8-channel DMA controller Up to 41 MSS I/Os with Schmitt Trigger inputs <ul style="list-style-type: none"> 25 I/Os can be used as FPGA I/Os 	<ul style="list-style-type: none"> High-performance analog signal conditioning blocks (SCB) with voltage, current and temperature monitors Analog compute engine (ACE) offloads CPU from analog initialization and processing of ADC, DAC, and SCBs Integrated ADCs and DACs with 1 percent accuracy 12/10/8-bit mode ADCs with 500/550/600 Ksps sampling rate Up to ten 50 ns high-speed comparators Up to 32 analog inputs and 3 outputs 	<ul style="list-style-type: none"> Based on Actel's proven ProASIC3® architecture 60,000 to 500,000 system gates with 350 MHz system performance Embedded SRAMs and FIFOs <ul style="list-style-type: none"> Variable aspect ratio 4,608-bit SRAM blocks x1, x2, x4, x9 and x18 organizations True dual-port SRAM (excluding x18) Up to 128 FPGA I/Os supporting LVDS, PCI, PCI-X, and LVTTTL/LVCMOS standards



For more information regarding Actel products and Pigeon Point board management solutions, please contact your local Actel sales representative. For more information regarding Pigeon Point AdvancedTCA shelf management solutions, contact Pigeon Point Systems directly.

You May Be Interested In:

Solutions and IP Catalog: www.actel.com/documents/IPPIB.pdf

SmartFusion Product Brochure: www.actel.com/documents/SmartFusion_PIB.pdf

Fusion Product Brochure: www.actel.com/documents/Fusion_PIB.pdf

Pigeon Point is the leader in hardware platform management solutions for xTCA. Choose the Pigeon Point Way for your xTCA products. Learn more at www.pigeonpoint.com.

Actel is the leader in low power FPGAs and mixed signal FPGAs and offers the most comprehensive portfolio of system- and power-management solutions. Learn more at www.actel.com.

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