

## Pigeon Point™ BMR-P1AFS-MCMC-SK Starter Kit Board Management Starter Kit for MicroTCA™ Carrier Hub Modules

This Pigeon Point Board Management Starter Kit provides everything you need to quickly and cost-effectively develop a compliant and interoperable MicroTCA Carrier Management Controller (MCMC), Carrier Manager and local Shelf Manager for  $\mu$ TCA® based on Fusion mixed-signal FPGAs. The kit includes:

- An FPGA design for a Fusion mixed-signal FPGA, implementing the core of an IPM Controller, including a Cortex-M1 ARM processor and supporting peripherals. This design is ready to be adapted for your MicroTCA Carrier Hub (MCH).
- Schematics for a complete MCMC subsystem (including the Pigeon Point  $\mu$ Carrier Manager™ and Pigeon Point  $\mu$ Shelf Manager™), ready for integration/adaptation into the design of your 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 Cortex-M1 ARM processor in the Fusion FPGA.
- Bench top MCMC and supporting hardware so that you can immediately begin the ramp up process on  $\mu$ TCA's IPMI-based management framework, without waiting for your custom hardware.
- One-stop support from Pigeon Point Systems for the hardware, firmware and software used in developing and delivering your Pigeon Point BMR-based MCMC, with complementary support from Microsemi for the FPGA design.

Please see the separate *Pigeon Point BMR-P1AFS-MCMC Product Brief* for more details on this reference design.

### Bench top MCMC and complementary management controllers

- Implements the BMR-P1AFS-MCMC reference design and includes the  $\mu$ Shelf Manager in binary form on the BMR-P1AFS-MCMC BTP.
- Includes an emulated AMC site with a Module Management Controller based on the Pigeon Point BMR-AVR-AMCm reference design to function in the management role of an AMC installed in the MicroTCA Carrier.
- Includes a minimal emulated Power Module Enhanced Module Management Controller (EMMC) for bench top use.

- Can be cabled together with an optional bench top Pigeon Point AMC Test Site Board to allow an arbitrary user-supplied AMC module to be included in the configuration.
- Includes rich collection of headers, switches and connectors for experimentation in the lab with  $\mu$ TCA management controller hardware and firmware operation.



### Technical specifications and User Guide

- *Pigeon Point BMR-P1AFS-MCMC Hardware Architecture Technical Specification*
- *Pigeon Point BMR-P1AFS-MCMC Software Architecture Technical Specification*
- *Pigeon Point Board Management Starter Kit User Guide: BMR-P1AFS-MCMC Edition*

### BMR-P1AFS-MCMC FPGA design

- FPGA design provided as a Libero IDE project (for use with Microsemi's Libero IDE FPGA development software, acquired separately)
- FPGA programming database file (PDB) provided for loading the default FPGA design into a P1AFS Fusion device using the Microsemi FlashPro utility (acquired separately)

### BMR-P1AFS-MCMC schematics and bill of materials

- Schematics provided in PDF form
- Bill of materials includes components for both the core reference design and additional parts used on the bench top reference implementation

## Readily adaptable firmware in source code form

- All mandatory and many optional IPMI/μTCA commands
- Numerous PPS extension commands, primarily used over the payload and debug serial interfaces
- Sophisticated support for firmware upgrades in the field
- Simple—but highly flexible—configuration of firmware features

## Software, FPGA design and schematics and documentation delivered via secure partner page

- Provides specific materials for your company
- Allows instant access to any updated materials that become available



World-Class Management Components  
FOCUSED. DEPENDABLE. PROVEN.

PARTNER PAGE

### BMR-P1AFS-MCMC Release Page

#### Documentation

<a href="#">bmr-p1afs-mcmc-rn.pdf</a>	Release Notes
<a href="#">bmr-p1afs-mcmc-sa-ts.pdf</a>	Software Architecture
<a href="#">bmr-p1afs-mcmc-ha-ts.pdf</a>	Hardware Architecture
<a href="#">bmr-p1afs-mcmc-ug.pdf</a>	User Guide

#### Hardware Design Materials

<a href="#">bmr-p1afs-mcmc-hwdesign.zip</a>	Hardware Reference Design
<a href="#">bmr-p1afs-mcmc-fpga.pdb</a>	Pre-built image: FPGA design and firmware
<a href="#">bmr-p1afs-mcmc-fpga.zip</a>	FPGA design (Microsemi Libero project)

#### Utilities and Images

<a href="#">SDR/FRU Compilers Page</a>	SDR and FRU compilers
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#### Sources

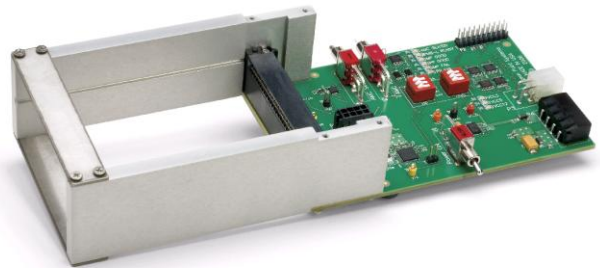
<a href="#">bmr-p1afs-mcmc-softconsole.zip</a>	BMR Firmware sources (for Microsemi SoftConsole)
<a href="#">bmr-p1afs-mcmc-firmware.tgz</a>	BMR Firmware sources (for Linux)

## Comprehensive Cortex-M1 development environment

- Cross GNU C compiler and binary utilities for H8S architecture
- Linux-based development environment included with BMR-P1AFS-ATCA Starter Kit and downloadable from CodeSourcery
- Windows-based development environment (the Microsemi SoftConsole Integrated Development Environment) available for downloading from Microsemi
- JTAG-based debugging and firmware download using Microsemi FlashPro3 JTAG programmer (purchased separately)

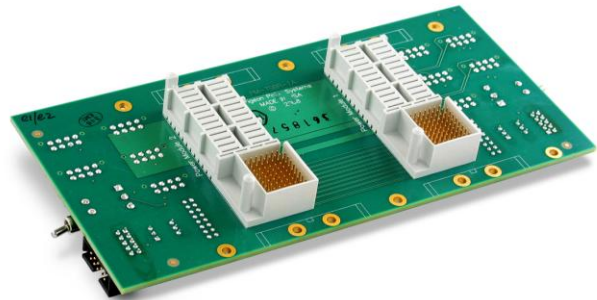
## Complementary AMC Test Site Board (AMC-TSB)

- Can be cabled to the BMR-P1AFS-MCMC bench top board to allow connecting a physical AMC
- Alternatively, can be connected to other BMR bench top boards to attach a physical AMC; contact PPS for specific additional AMC-TSB compatible boards
- Management and payload power for the attached AMC are drawn from a separate ATX +12V feed, not from the MCMC bench top board
- Not included in Starter Kit; available for separate purchase

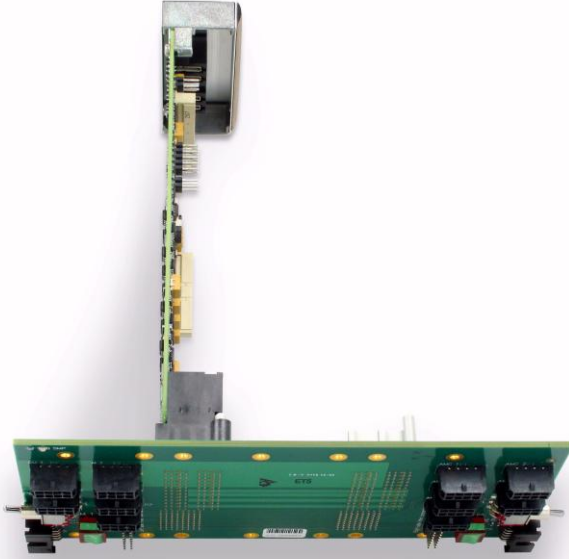


## Complementary Power Module Test Site Board (PM-TSB)

- Can be cabled to the BMR-P1AFS-MCMC bench top board to allow connecting up to two physical Power Modules (PMs)
- Allows powering key parts of the bench top configuration (including the MCMC and the emulated and actual AMCs) from the PMs
- Conceptually, the PM-TSB implements the PM interconnects that are typically provided by a MicroTCA backplane
- Not included in Starter Kit; available for separate purchase

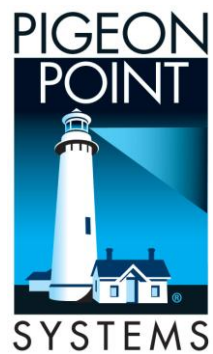


- Power channels for powered modules are cabled to connectors on the back side of the PM-TSB, with one or two power modules installed on the front (one pictured)



## Ordering information

BMR-P1AFS-MCMC-SK	Stand-alone Board Management Starter Kit for $\mu$ TCA MCHs
BMR-P1AFS-MCMC-SKA	Board Management Starter Kit Add-on for $\mu$ TCA MCHs (purchased as an alternative to BMR-P1AFS-MCMC-SK if another stand-alone $\mu$ TCA Board Management Starter Kit has already been licensed)
BMR-P1AFS-MCMC-BT	Bench top implementation of BMR-P1AFS-MCMC reference design
AMC-TSBR	AdvancedMC Test Site Board that can be cabled to the P1AFS MCMC bench top board so that a physical AMC can be attached
PM-TSBR	Power Module Test Site Board that can be cabled to the P1AFS MCMC bench top board so that up to two physical Power Modules can be attached



For more information, visit our website at <http://www.pigeonpoint.com>

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