

## PRODUCT BRIEF

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# Pigeon Point BMR-A2F-AMCm Starter Kit

## Board Management Starter Kit for Module Management Controllers

Within AdvancedMC and Custom Derivative Module Architectures

May 16, 2018

nVent  
Schroff GmbH  
[hardware.management@nVent.com](mailto:hardware.management@nVent.com)

[www.pigeonpoint.com](http://www.pigeonpoint.com)  
[schroff.nVent.com](http://schroff.nVent.com)



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This Pigeon Point Board Management Starter Kit provides everything you need to quickly and cost-effectively develop compliant and interoperable Module Management Controllers (MMCs) for AdvancedMC (AMC) or custom modules, based on the SmartFusion intelligent mixed-signal FPGA from Microsemi Corporation. The kit includes:

- A SmartFusion FPGA design that implements the core of an MMC, working with the Cortex-M3 ARM processor and supporting peripherals. This design is ready to be adapted for your AMC or custom module.
- Schematics for a complete MMC subsystem, ready for integration/adaptation into the design of your 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
- Bench top hardware for an xTCA-based carrier environment, so that you can immediately begin the ramp up process on the IPMI-based management framework of your focus architecture, without waiting for your custom hardware
- One-stop support for hardware, firmware and software used in developing and delivering your Pigeon Point BMR-based MMC

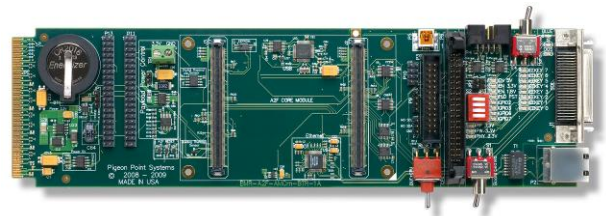
This reference design defines an MMC for AdvancedMCs or custom modules and is based on the A2F200 SmartFusion intelligent mixed-signal FPGA. Supported SmartFusion packages include CS288, FG256 and FG484. Please refer to Microsemi documentation for details of the differences in capabilities among these packages and see the separate *Pigeon Point BMR-A2F-AMCm Product Brief* for more details on the reference design.

### Technical specifications and User Guide

- Pigeon Point BMR-A2F-AMCm Hardware Architecture Technical Specification
- Pigeon Point BMR-A2F-AMCm Software Architecture Technical Specification
- Pigeon Point Board Management Starter Kit User Guide: BMR-A2F-AMCm Edition

### Bench top MMC

- Can be inserted directly into any compliant AMC slot, such as the one on the BMR-A2F-IPMC bench top board (which is based on the Microsemi SmartFusion mixed-signal FPGA) or into the BMR AMC Test Site Board (AMC-TSB), cabled to another compatible BMR bench top board.



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

- Provides specific materials for your company
- Allows instant access to any updated materials that become available
- Example hardware design materials section of release page (below) shows just one of provided variants for those materials



World-Class Management Components  
FOCUSED. DEPENDABLE. PROVEN.

PARTNER PAGE

### Pigeon Point BMR-A2F-AMCm (Module) Release Page

#### Documentation

- 📄 [bmr-a2f-amcm-rn.pdf](#)
- 📄 [bmr-a2f-amcm-ug.pdf](#)
- 📄 [bmr-a2f-amcm-sa-ts.pdf](#)
- 📄 [bmr-a2f-amcm-ha-ts.pdf](#)
- 📄 [amc-tsbr-ug.pdf](#)
- 📄 [bmr-a2f-amcm-amctester-report.html](#)
- 📄 [bmr-a2f-amcm-atcater-report.html](#)

Release Notes  
User Guide  
Software Architecture Specification  
Hardware Architecture Specification  
AMC-TSBR User Guide  
Polaris Networks AMC Tester results  
Polaris Networks ATCA Tester results

#### Hardware Design Materials

- 📄 [bmr-a2f-amcm-cm484r-hwdesign.zip](#)
- 📄 [bmr-a2f200-amcm-cm484r-fpga.pdf](#)
- 📄 [bmr-a2f200-amcm-cm484r-fpga.zip](#)

BMR-A2F-AMCm hardware reference design (schematics and BOM)  
Pre-Built Image: Combined FPGA and firmware image suitable for programming into the Microsemi A2F200-FG484 FPGA on the supplied bench top board  
FPGA design for an MMC based upon the A2F200M3F-FGG484I FPGA (Microsemi Libero Project)

#### Firmware Source Code

- 📄 [bmr-a2f-amcm-firmware.tar.gz](#)

BMR-A2F-AMCm firmware sources

#### Development Tools

- 📄 [arm-2010q1-188-arm-linux-gnu.tar.bz2](#)
- 📄 [msys-1.0.10.exe](#)
- 📄 [ipmitool-pps.exe.zip](#)
- 📄 [ipmitool-pps.tar.gz](#)

ARM compiler toolchain for Linux  
MSYS/MinGW environment (required for building the BMR firmware on Windows)  
Pre-built ipmitool binary for Windows (includes Cygwin)  
The IPMI communication utility source code (HPM.1)

### BMR-A2F-AMCm FPGA design

- FPGA design provided as a Libero SoC project (for use with Microsemi's Libero SoC FPGA development software, acquired separately)
- FPGA programming database file (PDB) provided for loading the default FPGA design into a SmartFusion device using the Microsemi FlashPro4 utility

### BMR-A2F-AMCm schematics and bill of materials

- Schematics provided in PDF form
- Bill of materials provided as an MS Excel spreadsheet; includes materials for both the core reference design and additional parts used on the bench top reference implementation

### Readily adaptable firmware in source code form

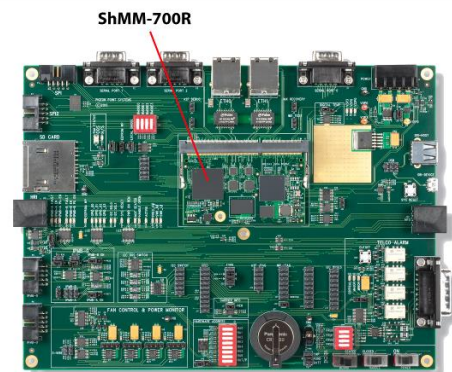
- All mandatory and many optional IPMI/ATCA/AMC commands supported over IPMB-L
- Numerous Pigeon Point extension commands, primarily used over the payload and debug serial interfaces
- Serial interface protocol based on IPMI Terminal Mode
- Payload alert notifications over payload interface for sensor events and receipt of reset/shutdown commands
- Sophisticated support for firmware upgrades in the field
- Simple—but highly flexible—configuration of firmware features

### Comprehensive Cortex-M3 development environment

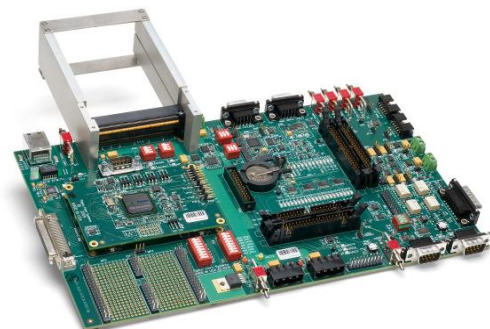
- x86-based Linux-based development environment included with BMR-A2F-AMCm Starter Kit (based on Mentor Graphics Sourcery Code Bench G++ Lite toolchain)
- Windows-based development environment (the Microsemi SoftConsole Integrated Development Environment) available for download from Microsemi
- JTAG-based firmware download using Microsemi FlashPro3/4 JTAG programmer (FlashPro4 included with Starter Kit)

### Bench top configuration for AdvancedTCA carriers

- Pigeon Point ShMM-700R Shelf Management Mezzanine with Pigeon Point Shelf Manager pre-installed in Flash (see separate product brief for details)
  - ShMM-700R supplied with i.MX287 edition of Pigeon Point Linux
- BTC-700R Bench Top Carrier provides a socket for the ShMM-700R and on-carrier resources similar to an actual in-shelf ShMM-700R carrier.

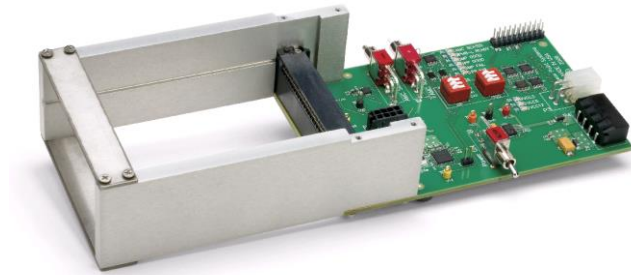


- BMR-A2F-IPMC bench top board, to serve as Carrier IPMC; note: the A2F-based core mezzanine installed on the bench top board is the same type of mezzanine that is delivered with the BMR-A2F-AMCm bench top board pictured on page 1
- BMR-A2F-IPMC bench top implements an AMC slot that is compatible with the BMR-A2F-AMCm bench top board
- Can be cabled together with a bench top Shelf Manager to form four node bench top ATCA/AMC IPMI management network (or three nodes when no AMC is installed in the bench top board's AMC slot)



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

- Can be cabled to the BMR-A2F-IPMC bench top board to allow connecting an additional physical AMC
- Management and payload power for the attached AMC are drawn from a separate ATX +12V feed, not from the IPMC bench top board
- Not included in Starter Kit; available for separate purchase



### Ordering Information:

BMR-A2F-AMCm-SK-ATCA Part #: 21991-136	Stand-alone Board Management Starter Kit for MMCs targeted to ATCA carrier configurations
BMR-A2F-AMCm-BTR-AMCm Part #: 21991-163	Bench top implementation of BMR-A2F-AMCm reference design
AMC-TSBR Part #: 21991-122	AdvancedMC Test Site Board that can be cabled to a BMR Carrier IPMC bench top board so that an additional physical AMC can be attached