

PRODUCT BRIEF

Pigeon Point BMR-A2F-VPX-SK Starter Kit Board Management Starter Kit

For VPX and ANSI/VITA 46.11-2022

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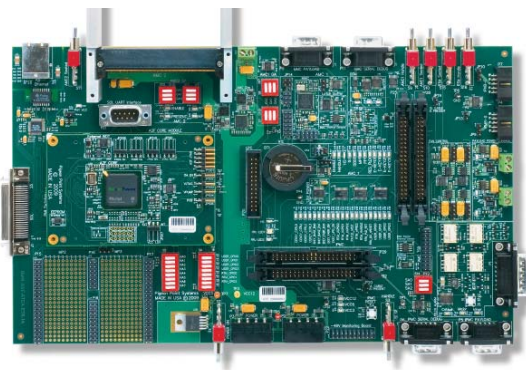


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This Pigeon Point Board Management Starter Kit provides everything you need to quickly and cost-effectively develop compliant and interoperable ANSI/VITA 46.11-2022 Tier-2 or Tier-1 IPM Controllers (IPMCs) for VPX based on Microsemi SmartFusion intelligent mixed-signal FPGAs.

The Board Management Starter Kit includes:

- A SmartFusion FPGA design that implements the core of a VITA 46.11-2022 Tier-2 or Tier-1 IPMC, working with the Cortex-M3 ARM processor and supporting peripherals. This design is ready to be adapted for your VPX module or other intelligent Field Replaceable Unit (FRU).
- Schematics for a corresponding IPMC subsystem, ready for integration/adaptation into the schematic for your module or FRU
- 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 Chassis Manager and IPMC hardware so that you can immediately begin the ramp up process on VITA 46.11's IPMI-based management framework, without waiting for your custom hardware
- One-stop support from nVent for schematics, firmware and software used in developing and delivering your Pigeon Point BMR-based IPMC, with complementary support from Microsemi for the FPGA design



Supported SmartFusion intelligent mixed-signal FPGAs include the A2F200 and A2F500, with CS288, FG256 and FG484 packages. Please refer to Microsemi documentation for details of the differences in capabilities among these devices and see the separate *Pigeon Point BMR-A2F-VPX Product Brief* for more details on the reference design.

Bench top IPMC

- Can be cabled together with the bench top Pigeon Point Chassis Manager to form a two-node bench top VITA 46.11 IPMI management network
- Bench top boards provide rich collection of headers, switches and connectors for experimentation in the lab with IPMC hardware and firmware operation
- FPGA prototyping area on bench top board facilitates experimentation with custom extensions to the FPGA design

Bench top board is also used for ATCA-focused BMR solutions and includes some features that are not relevant to the VPX context.

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 (on next page) shows just one of provided variants for those materials



Pigeon Point BMR-A2F-VPX Release Page

Documentation

[bmr-a2f-vpx-rn.pdf](#)
[bmr-a2f-vpx-ug.pdf](#)
[bmr-a2f-vpx-sa-ts.pdf](#)

[bmr-a2f-ipmc-ha-ts.pdf](#)

Release Notes
User Guide
Software Architecture
Specification
Hardware Architecture
Specification

Hardware Design Materials

[bmr-a2f-ipmc-cm484r-hwdesign.zip](#)

[bmr-a2f200-vpx-cm484r-fpga.pdb](#)

[bmr-a2f200-ipmc-cm484r-fpga.zip](#)

BMR-A2F-VPX 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 the A2F200-
FG484 FPGA (Microsemi Libero
Project)

Sources

[bmr-a2f-vpx-firmware.tar.gz](#)
[ipmitool-pps-tar.gz](#)

BMR-A2F-VPX firmware sources
The IPMI communication utility
(ipmitool) source code (HPM.1)

Technical specifications and User Guide

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

BMR-A2F-IPMC 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 FlashPro3/4

BMR-A2F-IPMC 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

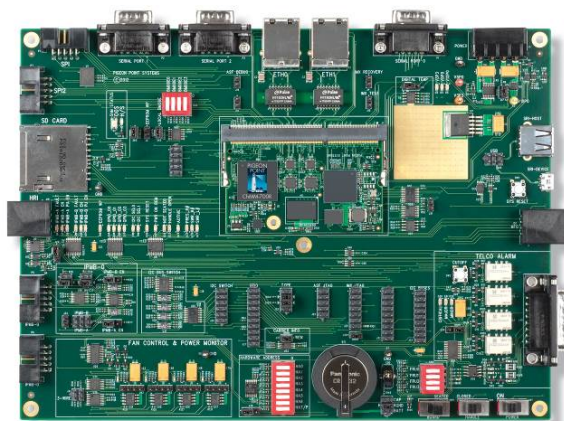
- All mandatory and many optional IPMI/VSO commands supported over System IPMB
- Numerous Pigeon Point extension commands, primarily used over the payload and debug serial interfaces
- Sophisticated support for firmware upgrades in the field
- Simple—but highly flexible—configuration of firmware features

Comprehensive Cortex-M3 development environment

- x86 Linux-based development environment included with BMR-A2F-VPX 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 FlashPro 3/4 JTAG programmer (FlashPro4 included with Starter Kit)

Bench top Chassis Manager

- Includes Pigeon Point ChMM-700R Chassis Management Mezzanine with Pigeon Point Chassis Manager pre-installed in Flash (see separate product brief for details)
- BTC-700R can be cabled together with the included bench top IPMC to form a 2-node bench top VITA 46.11 IPMI network



Pigeon Point Linux for ChMM-700R

- i.MX287 edition of Pigeon Point Linux; key features for Chassis Manager application include:
 - Based on Linux 2.6.x kernel port

Ordering Information:

BMR-A2F-VPX-SK Part #: 21991-135	Stand-alone Board Management Starter Kit for VPX modules and other intelligent FRUs
BMR-A2F-IPMC-BTR-VPX Part #: 21991-159	Bench top implementation of BMR-A2F-VPX reference design