

Flex Secure Control Module

(DC-SCM2)SCM203A

Flex Data Center Solutions

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The Flex SCM203A is a Compact Form Factor (CFF) DC-SCM 2 module designed to bring server management into a compact and flexible footprint. With dimensions comparable to a standard memory DIMM, the CFF design provides management functionality while minimizing board space requirements for high-density server platforms. Built to the OCP DC-SCM 2.2 specification, it delivers a standards-based DC-SCI 2 Type 1 interface and a CPU-node-agnostic architecture for platform flexibility.

Powered by the AspeedAST2700 BMC with integrated LTPI, this design eliminates the need for additional CPLD while offering advanced management features. It meets NSA CNSA 2.0 security standards using a Microchip TS1800 Root of Trust with Post-Quantum Cryptography (PQC) algorithms and an Infineon SLB9672 chip supporting TPM 2.0. Onboard components like memory, flash, etc., can be configured as per custom requirements. The optional I/O extension (on the same board or to front I/O via FFC cable), provides a USB-C UART and an 1GbE ports to meet diverse deployment needs.



Flex offers an OpenBMC software stack as the accompanying default management software on this module with the option to qualify additional management software stacks.

SCM203A Features

DC-SCM 2 board

- Compliant with DC-SCM 2.2 specification, with Type-1 pinout.
- Aspeed AST2700 management controller, with 2GB DDR5 SDRAM
- Dual 256MB QSPI NOR Flash devices for BMC firmware storage
- Dual 64MB QSPI NOR Flash devices for BIOS image storage
- Dual 64MB QSPI NOR Flash devices for a 3rd device firmware image or configuration
- UART, Dediprog, JTAG headers
- 1 USB 3.1 interface from host domain to HPM, through DC-SCM board
- 1 USB 2.0 interface from host domain to HPM
- 1 USB 2.0 interface from BMC domain to HPM
- NC-SI access to BMC through HPM network interface

Onboard RoT

- Microchip TS1800 Platform Root of Trust (PRoT)
- Commercial National Security Algorithm (CNSA) Suite 2.0 and Quantum Computing support with PQC algorithms ML-DSA, LMS, ML-KEM
- I2C/I3C/GPIO connectivity to host Node CPUs and BMC
- Flash image integrity check while keeping CPUs in reset for up to 3 devices (BMC, BIOS, and PCIe switch or Accelerator)
- Runtime SPI monitoring
- Hardware acceleration supporting ECDSA-384 and RSA (256 to 4096 bits)
- Device Attestation with SPDM
- Secure Update with PLDM

Onboard TPM

- Infineon SLB9672 TPM Controller
- Compliant with the TPM 2.0 specification

DC-SCM Adapter Board (DAB)

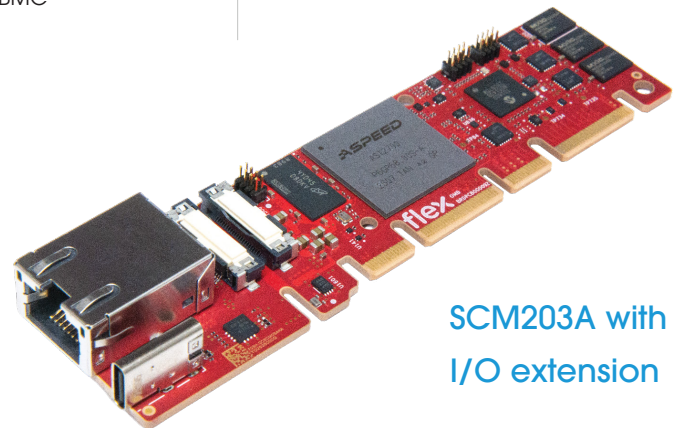
- Optional DC-SCM Adapter Board (DAB) with 12V power-connector for standalone operation and evaluation

Optional I/O Extension

- Option to add I/O ports
 - Same DC-SCM PCBA extension or using an FFC cable to front I/O board
 - 1 RJ45 1GbE management port connector, connected to BMC
 - 1 USB-C serial port connector, connected to BMC

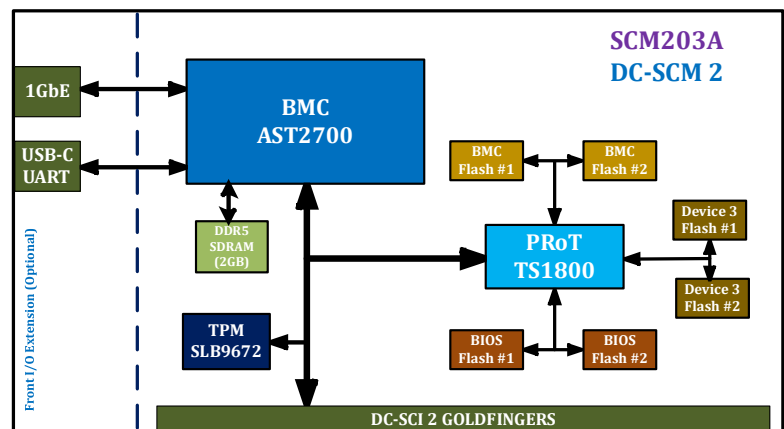
Software

- Flex OpenBMC firmware stack (default)
- Features typical inventory, sensor monitoring, firmware updates, power management, and thermal management functions
- NC-SI, MCTP, PLDM and SPDM attestation support
- User interface access with WebGUI, Virtual KVM/Media (HTML5), IPMI, Redfish, ssh, and serial port
- Support for CA Assembly Bill A.B.1906 and Senate Bill SB-327



SCM203A with I/O extension

Flex SCM Block Diagram



We provide cloud infrastructure solutions from design, integration, and manufacturing to sustainable circular economy services, all at cloud scale. We enable our customers to accelerate innovation and time-to-market with our server reference designs, racks, power modules, power supplies, and critical power infrastructure.