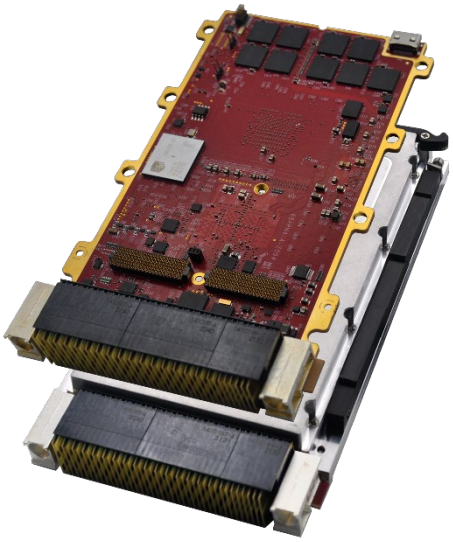
North Atlantic Industries

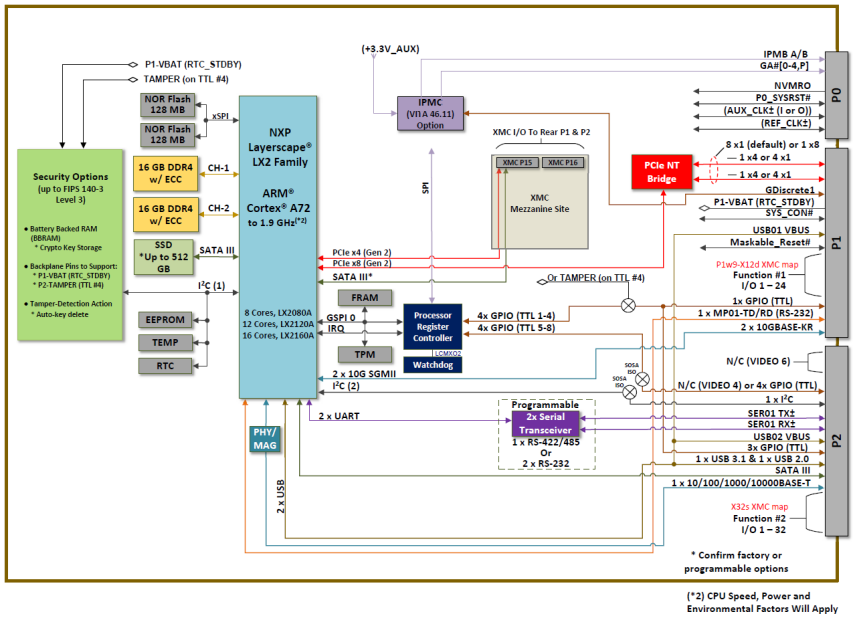



68ARM4 3U OpenVPX™ SOSA™-Aligned Single Board Computer
NXP Layerscape® LX2 Processor Family (8, 12 or 16 Cortex-A72 Cores)

Configure to Customize

The **68ARM4** is a **SOSA™**-Aligned 3U OpenVPX NXP Layerscape® LX2 Processor Family with Cortex-A72 CPU (8, 12 or 16 Core options), running up to 1.9 GHz Single Board Computer that can be configured with up to two Smart I/O and communications function modules when fitted with the NAI-XMC configuration option. Ideally suited for rugged Mil-Aero applications, the 68ARM4 delivers off-the-shelf solutions that accelerate deployment of SWaP-optimized systems in air, land and sea applications.



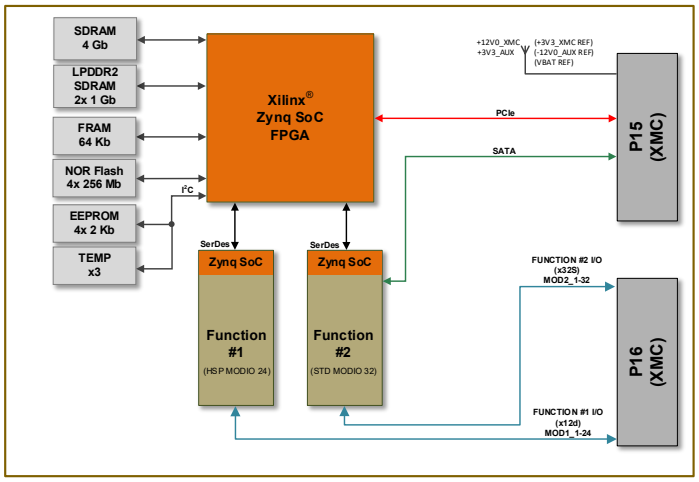


Features Summary

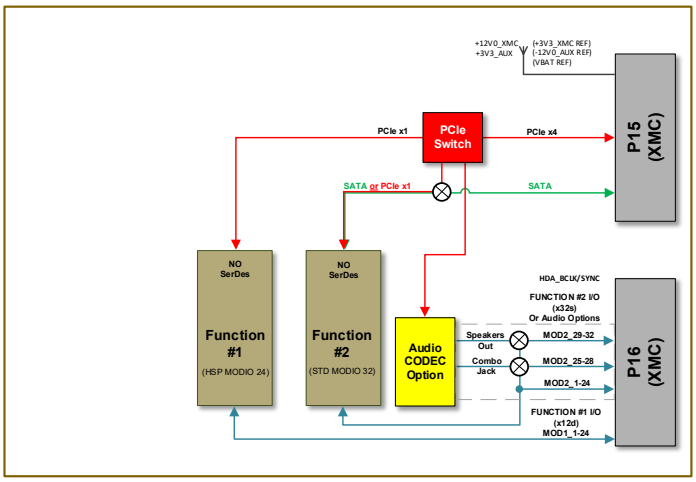
- **3U OpenVPX (ANSI/VITA 65) SOSA™-Aligned Profiles Supported:**
  - SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16
  - MOD3-PAY-1F1F2U1TU1T1U1T-16.2.15-1
    - Data plane: 1 x4 or 4 x1 PCIe (Gen 2)
    - Expansion Plane: 1 x4 or 4 x1 PCIe (Gen 2)
    - P1w9-P1w14: XMC or Module-1 I/O (24)
    - Control Plane: 2x 10GBase-KR (1G-KX)
    - Video not applicable (N/C)
    - 1 x USB 3.1 Gen 1 & 1 x USB 2.0
    - Storage: SATA III
    - Control Plane: 1 x 10/100/1000/10000Base-T
    - P2w9-P2w16: XMC/NAI Module-2 I/O (32)
- **Processor/Memory**
  NXP LX2 Processor Family up to 1.9 GHz w/ 8, 12 or 16 Cortex-A72 CPU Cores; 32 GB DDR4 SDRAM (Default)
    - Error correction code (ECC) memory
  - (Up to) 512 GB (256 GB default) SATA SSD
  - 2 x 128 MB NOR FLASH
- **Security / Cybersecurity (Options)**
  - FIPS 140-3 up to Level 3 Design Support
  - Crypto-key storage
    - Battery-backed RAM (external V-Bat)
  - Secure Boot
  - Anti-tamper / Tamper Detect & Sanitize
- **Motherboard Peripheral I/O (w/ options)**
  - 8x GPIO TTL (4x + 4x optional)
  - I²C (optional)
  - 1 x 422/485 or 2 x RS-232 Ports
  - RS-232 Maintenance Port
- **IPMC Support**
  - VITA 46.11 Tier-2, basic, compatible (configured option)
- **Smart I/O Functions (w/ NAI XMC)**
  - Support for 2 independent modules
  - SATA II interface to function slot #2 (e.g. for 2 TB expansion option)
- **Operating Systems Support**
  - Wind River® Helix™ Virtualization Platform, Linux, VxWorks® 7, Cert Edition; Windows®; Ubuntu 22.x Linux®, DDC-I Deos™, Lynx MOSA.ic, Green Hills INTEGRITY-178 tuMP
- **Background Built-in-Test**
  Continuous BIT (where applicable)
- **COSA® Architecture**
- **Intelligent I/O library support**
- **Operating Temperature***
  - Commercial: 0°C to +55°C
  - Rugged: -40°C to +71°C
- **Mechanical Options (ANSI/VITA 48)**
  - Air-cooled; 3U, 5HP/1.0" pitch
  - Conduction-cooled; 3U, 1.0" pitch
- **Power***
  - 60 W (Typical, Maximum)

*Note: Maximum performance and temperature ranges are dependent on system environment, utilization, and thermal conditions; sustained operation at peak loads may not be supported – refer to documentation for specific guidelines

Board Platform NAI-XMC Details



NAI-XMC I/O Block Diagram



(PENDING) NAI-XMC PCIe and SATA Expansion Block Diagram

Select up to 2 functions for your application (with NAI-XMC configuration option)

For a full listing of 100+ available smart functions and detailed specifications please visit https://www.naii.com/functions

I/O Modules
Digital IO Including Differential, Discrete, Relay, TTL/CMOS, Variable Reluctance
Measurement Modules
LVDT / RVDT Measurement, IRIG Timecode Receiver and Generator, Thermocouple and RTD Measurement, Synchro / Resolver Measurement, Strain Gauge Meas.
Communication Modules
ARINC 429/575, CAN bus, Ethernet NIC, MIL-STD-1553, MIL-STD-1760, IEEE- 1394b (FireWire), Serial RS232/422/485
Combination Modules
Multiple Choices of Combinations of I/O and Communications
SSD Expansion Memory
Multiple Choices of High Capacity SATA SSD Expansion Memory

Architected for Versatility

NAI's Configurable Open System Architecture™ (COSA®) offers a choice of over 100 smart I/O, communications, or Ethernet switch functions, providing the highest packaging density and greatest flexibility of any 3U SBC in the industry. Preexisting, fully-tested functions can be combined in an unlimited number of ways quickly and easily.

One-Source Efficiencies

Eliminate man-months of integration with a configured, field-proven system from NAI. Specification to deployment is a seamless experience as all design, state-of-the-art manufacturing, assembly and test are performed - by one trusted source. All facilities are located within the U.S. and optimized for high-mix/low volume production runs and extended lifecycle support.

Product Lifecycle Management

From design to production and beyond, NAI's product lifecycle management strategy ensures the long-term availability of COTS products through configuration management, technology refresh and obsolescence component purchase and storage

Made in the USA
Certified Small Business