

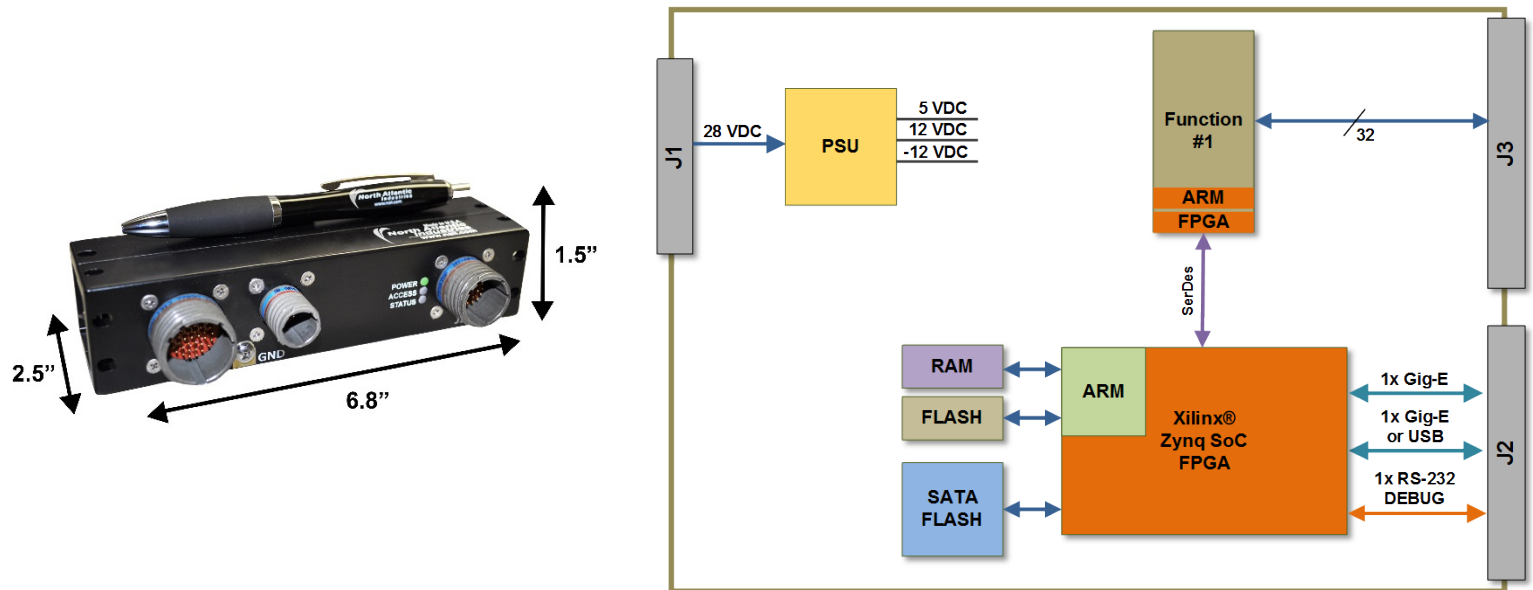


NIU1A – Nano Interface Unit

I/O Interface with optional ARM1 Processor

Configure to Customize

The [NIU1A](#) is a small, rugged, low-power, system. It consists of an integrated power supply, one function slot which can be configured with a field-proven, NAI Intelligent I/O and Communications function module, and an optional ARM® Cortex®-A9 processor. Ideally suited for rugged Mil-Aero applications, the NIU1A delivers off-the-shelf solutions that accelerate deployment of SWaP-optimized systems in air, land and sea applications.



Features

- Supports 1 intelligent I/O function module
- 2x 10/100/1000 Base-T Ethernet or 1x 10/100/1000 Base-T Ethernet and USB
- MIL-STD-461F*, MIL-STD-704A
- 1.5" x 6.8" x 2.5" (incl. connectors)
@ 1.2 lbs. (544 g)
- 128 MB DDR3 SDRAM
- Optional ARM® Cortex® - A9 Dual Core 800MHz Processor
- 4.784 GB SATA II NAND Flash (up to 32 GB option)
- <15 W MB power dissipation
- 1x RS-232
- Wind River® Linux, VxWorks® and Xilinx® PetaLinux OS Support
- Continuous Background BIT
- COSA® Architecture
- VICTORY Interface Services (Contact factory)
- Commercial and rugged applications
- Operating temp: -40° C to +71° C conduction cooled
- 28 VDC input

Select up to 1 independent function for your application

I/O		Measurement & Simulation	
A/D	±1.25 VDC to ±100 VDC or 0-25 mA; 16 or 24-Bit; 12 or 16 Ch	Synchro/Resolver-Digital	16-Bit; ±1Arc-Min accuracy; 4 Ch
D/A	±1.25 VDC to ±80 VDC or ±25 mA to 100 mA; 16-Bit, 4-16 Ch	LVDT/RVDT-Digital	16-Bit resolution; 4 Ch
Discrete	0 to 60 VDC; Sink, source or push/pull; up to 24 Ch	Digital-Synchro/Resolver	16-Bit; Up to 3 VA; 1-3 Ch
Isolated Discrete	0 to ±80 VAC or VDC; 16 Ch	Digital-LVDT/RVDT	16-Bit; Up to 3 VA; 1-3 Ch
Relay	SPDT; 4 Ch	AC Reference	2 to 115 V _{RMS} ; Up to 6 VA; 1 Ch
TTL	0 to 5.5 VDC; 24 Ch	RTD	16-Bit; 2, 3 or 4-wire; 8 Ch
Differential Transceiver	Up to ±12V; 422/485 Pulse Gen/Meas; 16 Ch	Thermocouple	J, K, T, E, R, S, B, N; 4 Ch
Communications		Strain Gage	16-Bit; 4 Ch
MIL-STD-1553	Quad Ch Dual Redundant; Transformer or Direct		
RS-232/422/423/485	4 Ch		
ARINC 429/575	12 Ch		
CANBus	8 Ch		

Architected for Versatility

NAI's Configurable Open System Architecture™ (COSA®) offers a choice of over 70 intelligent I/O and communications options. Preexisting, fully-tested functions can be selected to quickly and easily meet system requirements. Individually dedicated I/O and communications processors allow mission computers to manage, monitor and control via single or dual Ethernet.

All products are designed to operate under extreme temperature, shock, vibration and EMI environments. EMI filters and gaskets meet or exceed MIL-STD-461F* and MIL-STD-810G requirements.

Board Support Package and Software Support

The NIU1A includes BSP and SDK support for Wind River® VxWorks® / Linux and Xilinx® PetaLinux tools. In addition, software support kits are supplied, with source code and board-specific library I/O APIs, to facilitate system integration. Each I/O function has dedicated processing, unburdening the SBC from unnecessary data management overhead.

Background Built-In-Test (BIT)

BIT continuously monitors the status of all I/O during normal operations and is totally transparent to the user. SBC resources are not consumed while executing BIT routines. This simplifies maintenance, assures operational readiness, reduces life-cycle costs and— *keeps your systems mission ready.*

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 in the U.S. and optimized for high-mix/low volume production runs and extended lifecycle support.

Product Lifecycle Management

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

**MIL-STD-461F requires proper shielded cables and system practices*

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