



Accelerate Your Time-to-Mission™

NIU1A – Nano Interface Unit

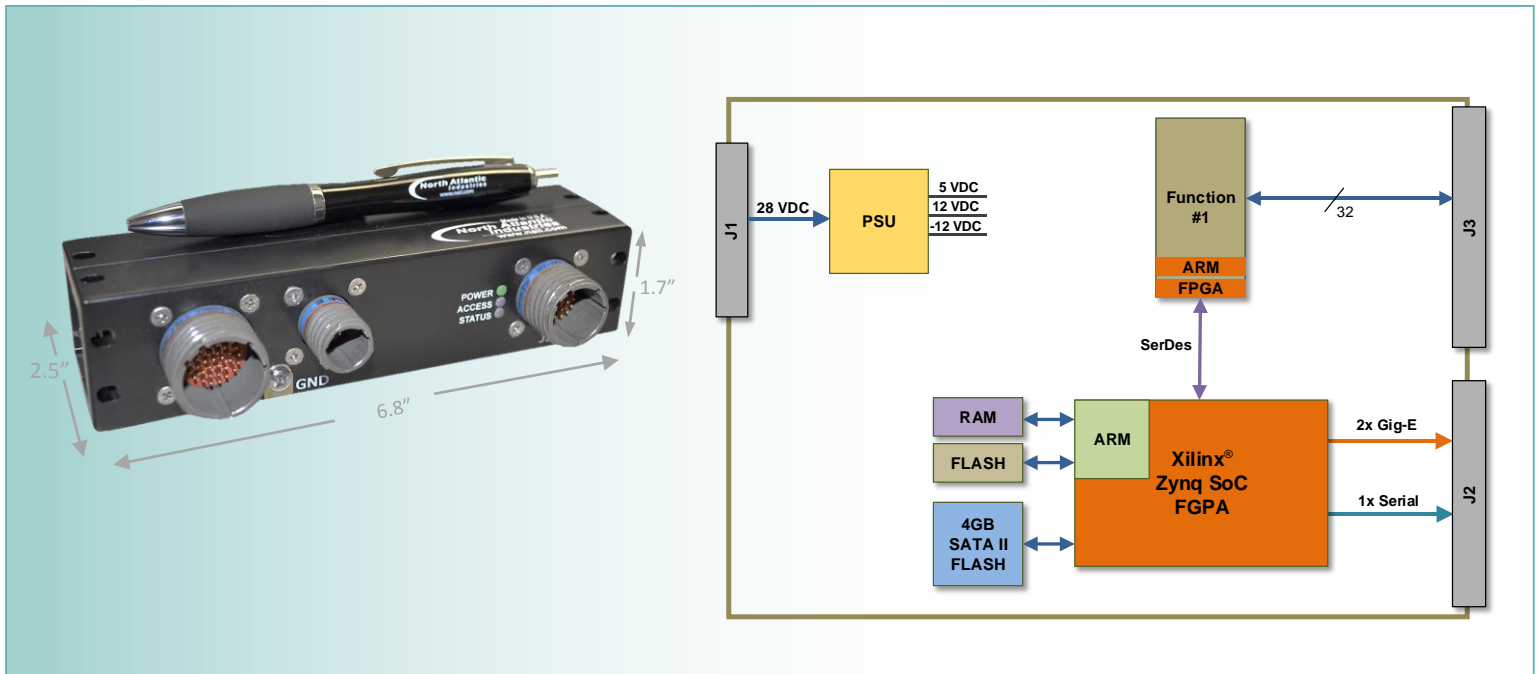
I/O Interface with optional ARM1 Processor



Made in the USA
Certified Small Business

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
- 1.7" x 6.8" x 2.5" (incl. connectors) approx. 1.2 lbs. (545 g) with 3 mounting options
- 512 MB DDR3 SDRAM
- Optional ARM Cortex™-A9 Dual Core 800MHz Processor
- 4 GB SATA II NAND Flash (up to 32 GB option)
- <15 W MB power dissipation
- 1x RS232
- Wind River® Linux, VxWorks® and Xilinx® Petalinux OS Support (optional w/ARM)
- Continuous Background Built-in-Test (BIT)
- COSA™ Architecture
- VICTORY Interface Services (Contact factory)
- Commercial and rugged applications
- Operating temp: -40°C to +71°C conduction cooled
- 28 VDC input
- MIL-STD-461F*, MIL-STD-810G, MIL-STD-1275 & 704A-F

Select 1 independent function for your application

Processors & Operating Systems (if req'd.)		Motion Motion Control – Measurement/Simulation	
ARM (Optional)	Cortex™-A9	AC Reference	2 to 115 VRMS; Up to 6 VA; 1 Ch
		Synchro/Resolver-Digital	16-Bit; ±1Arc-Min accuracy; 4 Ch. (Measurement)
OS	Wind River® Linux	LVDT/RVDT-Digital	16-Bit resolution; 4 Ch. (Measurement)
	Wind River® VxWorks®	Digital-Synchro/Resolver	16-Bit; Up to 3 VA; 1-3 Ch. (Simulation)
	Xilinx® PetaLinux	Digital-LVDT/RVDT	16-Bit; Up to 3 VA; 1-3 Ch. (Simulation)
Analog		Communications	
A/D	±1.25 VDC to ±100 VDC or 0-25 mA; 16 or 24-Bit; 12 or 16 Ch	ARINC 429/575	12 Ch
D/A	±1.25 VDC to ±80 VDC or ±25 mA to 100 mA; 16-Bit, 4-16 Ch	CANBus	8 Ch
RTD	16-Bit; 2, 3 or 4-wire; 8 Ch	MIL-STD-1553	Quad Ch Dual Redundant; Transformer or Direct
Strain Gage	16-Bit; 4 Ch	RS-232/422/423/485	4 Ch
Thermocouple	J, K, T, E, R, S, B, N; 4 Ch		
Digital			
Discrete	0 to 60 VDC; Sink, source or push/pull; up to 24 Ch	Differential Transceiver	Up to ±12V; 422/485 Pulse Gen/Meas; 16 Ch
Isolated Discrete	0 to ±80 VAC or VDC; 16 Ch	Relay	SPDT; 4 Ch
TTL	0 to 5.5 VDC; 24 Ch		

Architected for Versatility

NAI's Custom-On-Standard Architecture™ (COSA™) offers a choice of over 40 intelligent I/O and communications options. Pre-existing, 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.

Software Support and Board Support Package

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

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.

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 configuration management, technology refresh, and obsolescence component purchase and storage.

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

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