



SIU36 Sensor Interface Unit

Configure with up to 18 I/O and Communication Function Modules –
Over 70 smart modules to choose from

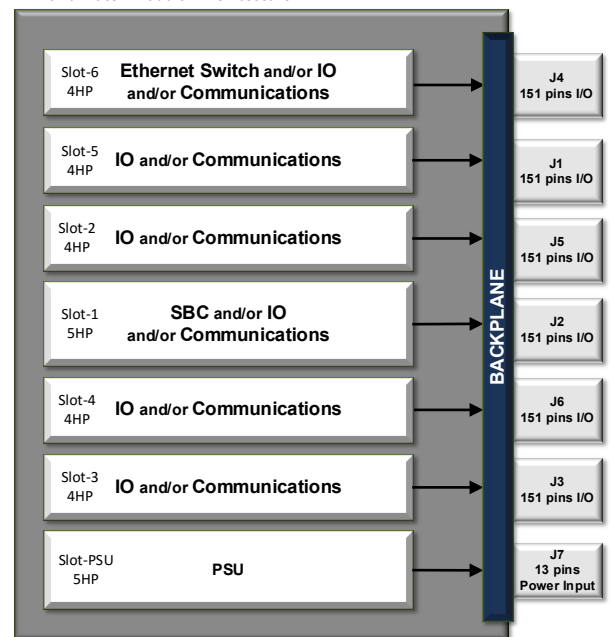
Configure to Customize

The [SIU36](#) is a highly configurable rugged system or subsystem ideally suited to support a multitude of Mil-Aero applications that require high-density I/O, communications, Ethernet switching and processing. The SIU36 leverages NAI's 3U boards to deliver off-the-shelf solutions that accelerate deployment of SWaP-optimized systems in air, land and sea applications.



Versatile & Scalable Rugged Architecture for Demanding Embedded System Applications

Mix-and-Match Modular Architecture



Data Acquisition (DAQ) • Fire Control & Targeting System (FCTS) • Remote Data Concentrator (RDC) • Vehicle Management System (VMS) Data Concentrator Unit (DCU) • Remote Interface Unit (RIU) • Health and Usage Monitoring System (HUMS) • Aircraft Interface Unit (AIU)

Features

- 6x 3U OpenVPX™ Card Slots
 - Supports up to 18 I/O and/or Communication smart functions
 - 70+ modules to choose from
- Local or External SBC Host I/F capable
 - Processor Options: Freescale PowerPC™ QorIQ® T2080, Intel® Core™ i7 or ARM® Cortex® -A9 & -A53
 - SBC-less remote interface supported via Ethernet connection to your mission computer
- Reduced SWaP footprint
 - 4.78" x 9.39" x 7.13" (incl. connectors)
 - ~ 6.85 lbs. Chassis plus ~ 1.25 lbs. for PSU and each addl. board
 - 28 VDC Input
 - Power is configuration dependant 50 W typ. (up to 150 W capable)
- Configurable I/O Communications and Processing
- COTS/NDI Sense & Response system
- Wind River VxWorks®, Xilinx Petalinux, Microsoft Windows® and DDC-I Deos® OS support
- Continuous Background Built-In-Test (BIT) (board/function supported as applicable)
- COSA® Architecture
 - Aligned with MOSA, OSA, SOSA™ and the FACE™ technical standard
 - VICTORY Interface Services Initiative (Contact factory)
- Specifications
 - Operating temp: -40 °C to +71 °C @ thermal interface, conduction cooled; convection & air-cooled options
 - 28 VDC input 50 ms hold-up option
 - Environmental/EMI MIL-STD-461*, MIL-STD-810, MIL-STD-1275 & MIL-STD-704 (A included)

Select up to 18 independent functions for your application

Processors & Operating Systems (if req'd.)		Digital	
PowerPC™ Power Architecture®	NXP® (Freescale) T2080	Discrete	0 to 60 VDC; Sink, source or push/pull; up to 24 Ch
		Isolated Discrete	0 to ±80 VAC or VDC; 16 Ch
ARM®	Xilinx Cortex®-A9, -A53	TTL	0 to 5.5 VDC; 24 Ch
Intel®	Core i7™	Differential Transceiver	Up to ±12V; 422/485 Pulse Gen/Meas; 16 Ch
OS	Microsoft Windows®	Relay	SPDT; 4 Ch
	DDC-I Deos®	Motion Control – Measurement/Simulation	
	Wind River VxWorks® 6.x, 7.x and 653 3.x & HVP	AC Reference	2 to 115 V _{RMS} ; Up to 6 VA; 1 Ch
	Xilinx PetaLinux	Synchro/Resolver-Digital	16-Bit; ±1Arc-Min accuracy; 4 Ch. (Measurement)
Analog		LVDT/RVDT-Digital	16-Bit resolution; 4 Ch. (Measurement)
A/D	±1.25 VDC to ±100 VDC or 0-25 mA; 16 or 24-Bit; 12 or 16 Ch	Digital-Synchro/Resolver	16-Bit; Up to 3 VA; 1-3 Ch. (Simulation)
D/A	±1.25 VDC to ±80 VDC or ±25 mA to 100 mA; 16-Bit, 4-16 Ch	Digital-LVDT/RVDT	16-Bit; Up to 3 VA; 1-3 Ch. (Simulation)
RTD	16-Bit; 2, 3 or 4-wire; 8 Ch	Communications	
Strain Gage	16-Bit; 4 Ch	Ethernet Switch*	8 Ports Layer 2/3 Management
Thermocouple	J, K, T, E, R, S, B, N; 4 Ch	ARINC 429/575	12 Ch
		CANBus	8 Ch
		MIL-STD-1553	Quad Ch Dual Redundant; Transformer or Direct
		RS-232/422/423/485	4 Ch

*Occupies 2 module slots

Architected for Versatility

NAI's Configurable Open System Architecture™ (COSA®) offers a choice of over 70 smart I/O, communications, Ethernet switch and SBC options. Preexisting, fully-tested functions can be combined in an unlimited number of ways 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. Alternately, select one of NAI's 3U SBC boards.

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.

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 grounding practices.

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