

SIU34 Rugged COTS Systems 3U OpenVPX Sensor Interface Unit

Configure with up to 12 I/O and Communication Function Modules

The SIU34 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 SIU34 leverages NAI's 3U OpenVPX™ 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 Including: 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

- 4x 3U OpenVPX[™] Card Slots
 - Supports up to 12 I/O and/or Communication smart functions
- 100+ modules to choose from Local or External SBC Host I/F capable
- Processor Options: Freescale PowerPC[™] QorIQ® T2080, Intel® Core™ i7, ARM® Cortex® -A9 or ARM® Cortex® -A53
- SBC-less remote interface supported via Ethernet connection to your mission computer
- Configurable I/O Communications and
- Processing COTS/NDI Sense & Response system

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

- **COSA®** Architecture
 - Supports MOSA, OSA, SOSA™ and the FACE™ technical standards
- **Reduced SWaP Footprint** 5.7" x 5.9" x 9.4" (est.)
 - (includes connectors) ~9.7 lbs. incl. ~2.2 lbs. for PSU plus ~1.35 lbs.
 - each additional fully populated board 28 VDC input
 - Power is configuration dependent
 - 50 W typ. (up to 130 W capable) 50 ms (min.) PSU hold-up option

- Wind River VxWorks®, Xilinx PetaLinux, Microsoft Windows® and DDC-I Deos® OS support
- Continuous Background Built-In-Test (BIT) (board/function supported as applicable) Specifications
- - Operating temp: -40°C to +71°C @ thermal interface, conduction cooled
 - Environmental/EMI MII -STD-461
 - MIL-STD-810
 - MIL-STD-1275
 - MIL-STD-704



I/O Boards and Single Board Computers					
Model	Description		Туре	Model	Description
68ARM1	3U OpenVPX ARM® Cortex®-A9 Single Board Computer		High Density I/O Boards	<u>68DT1</u>	3U OpenVPX Multi-channel Discrete I/O Board
68ARM2	3U OpenVPX, Single Board Computer, Xilinx Zynq UltraScale+		Multifunction I/O Boards	<u>68G5</u>	3U OpenVPX I/O and Communications Board
<u>68INT4</u>	3U OpenVPX, Single Board Computer, Intel Xeon Quad-core E3- 1505LV6 @ 2.2 GHz			<u>68G5E</u>	3U OpenVPX Ethernet Switch and Multifunction I/O Board
<u>68INT5</u>	3U OpenVPX, Single Board Computer, Intel Xeon six-core E- 2276ME @ 2.8 GHz			<u>68G5P</u>	3U OpenVPX Multifunction I/O Board with External PCIe & SATA II I/F
68PPC2	3U OpenVPX, Single Board Computer, NXP® QorlQ® T2080 Quad- Core e6500 @1.5 GHz		Rugged Power Supplies	<u>VPX68</u>	DC/DC 3U 1.0" Pitch VITA 62 Power Converter meets MIL-STD-704A-F
<u>68CB6</u>	3U VPX Combination I/O & Communications Board				
Smart Function Module					
Module Category			Туре	Module Category	
AC Reference			Communication Modules	Serial Communications	
IRIG Timecode Receiver and Generator				Time-Triggered Ethernet	
LVDT RVDT Measurement and Simulation				Analog-to-Digital	
Pulse Timer Receiver and Generator				Chip Detector and Fuzz Burn	
Strain Gauge Measurement				Digital IO - Differential Transceiver	
Synchro Resolver Measurement and Simulation				Digital IO - TTL,CMOS	
Thermocouple and RTD Measurement			I/O Modules	Digital-to-Analog	
ARINC Communications				Discrete IO - Multichannel, Programmable	
CANBus Communications				<u>Relay</u>	
Ethernet NIC Interface				Variable Reluctance	
Ethernet Switch		11	Combination Modules	MIL-STD-1553B, Discrete IO - Multichannel,Programmable	
IEEE 1394 (FireWire)		1		MIL-STD-1553B, ARINC Communications	
MIL-STD-1553B		11	Storage	SATA Solid State Drive (SSD)	
MIL-STD-1760		11		Ī	
	68ARM1 68ARM2 68INT4 68INT5 68INT5 68PPC2 68CB6 Module Cate AC Referen IRIG Timecc LVDT RVDT Pulse Timer Strain Gaug Synchro Re Thermocour ARINC Com CANBUS Co Ethernet NII Ethernet SW IEEE 1394 (Model Description 68ARM1 3U OpenVPX ARM® Cortex®-A9 Single Board Computer 68ARM2 3U OpenVPX, Single Board Computer, Xilinx Zynq UltraScale+ 68INT4 3U OpenVPX, Single Board Computer, Intel Xeon Quad-core E3- 1505LV6 @ 2.2 GHz 3U OpenVPX, Single Board Computer, Intel Xeon six-core E- 68INT5 3U OpenVPX, Single Board Computer, Intel Xeon six-core E- 68INT5 3U OpenVPX, Single Board Computer, NXP® QorlQ® T2080 Quad-Core e6500 @1.5 GHz 68CB6 3U VPX Combination I/O & Communications Board Smart Function N Module Category AC Reference IRIG Timecode Receiver and Generator LVDT RVDT Measurement and Simulation Pulse Timer Receiver and Generator Synchro Resolver Measurement ARINC Communications CANBus Communications Ethernet NIC Interface Ethernet Switch IEEE 1394 (FireWire) MIL-STD-1760	Model Description 68ARM1 3U OpenVPX ARM® Cortex®-A9 Single Board Computer 68ARM2 3U OpenVPX, Single Board Computer, Xilinx Zynq UltraScale+ 68INT4 3U OpenVPX, Single Board Computer, Intel Xeon Quad-core E3- 68INT5 3U OpenVPX, Single Board Computer, Intel Xeon six-core E- 2276ME @ 2.8 GHz 68INT5 68INT5 3U OpenVPX, Single Board Computer, Intel Xeon six-core E- 2276ME @ 2.8 GHz 68PPC2 68PPC2 3U OpenVPX, Single Board Computer, NXP® QorlQ® T2080 Quad-Core e6500 @1.5 GHz 68CB6 3U VPX Combination I/O & Communications Board Smart Function Mo Module Category AC Reference IRIG Timecode Receiver and Generator IVDT RVDT Measurement and Simulation Pulse Timer Receiver and Generator Synchro Resolver Measurement and Simulation Thermocouple and RTD Measurement ARINC Communications CANBus Communications Ethernet NIC Interface Ethernet Switch IEEE 1394 (FireWire) MIL-STD-15538 MIL-STD-1760	Model Description Type 68ARM1 3U OpenVPX ARM® Cortex®-A9 Single Board Computer High Density I/O Boards 68ARM2 3U OpenVPX, Single Board Computer, Xilinx Zynq UltraScale+ High Density I/O Boards 68INT4 3U OpenVPX, Single Board Computer, Intel Xeon Quad-core E3- 1505LV6 @ 2.2 GHz Multifunction I/O Boards 68INT5 3U OpenVPX, Single Board Computer, Intel Xeon Six-core E- 2276ME @ 2.8 GHz Rugged Power 68PPC2 3U OpenVPX, Single Board Computer, INXP® QorIQ® T2080 Quad- Core e6500 @1.5 GHz Rugged Power 68CB6 3U VPX Combination I/O & Communications Board Type Communications Board Type AC Reference Communication RIG Timecode Receiver and Generator LVDT RVDT Measurement and Simulation I/O Modules Pulse Timer Receiver and Generator I/O Modules Sinain Gauge Measurement ARINC Communications I/O Modules CANBus Communications Combination Modules Ethernet NIC Interface Combination Modules Ethernet NIC Interface Storage MIL-STD-1553B Storage	Model Description Type Model 88ARM1 3U OpenVPX ARM® Cortex®-A9 Single Board Computer High Density I/O Boards 68DT1 68ARM2 3U OpenVPX, Single Board Computer, Xilinx Zynq UltraScale+ 68G5 68INT4 3U OpenVPX, Single Board Computer, Intel Xeon Quad-core E3- 1505LV6 @ 2.2 GHz 68G5E 68G5F 68INT5 3U OpenVPX, Single Board Computer, Intel Xeon six-core E- 227GME @ 2.8 GHz Rugged Power VPX68 68DFC2 3U OpenVPX, Single Board Computer, NXP® QorlQ® T2080 Quad- Core e6500 @ 1.5 GHz Rugged Power VPX68 68C5E 3U VPX Combination I/O & Communications Board Rugged Power VPX68 68C5E 3U VPX Combination I/O & Communications Board Communication Serial Comm Module Category Model Category Type Module Category Serial Communication LVDT RVDT Measurement and Simulation Communication Digital 10 - Digital 10

Select up to 12 independent functions for your application with up to 4 card slots

Architected for Versatility

NAI's Configurable Open Systems 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 ruggedized embedded product solutions 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.



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