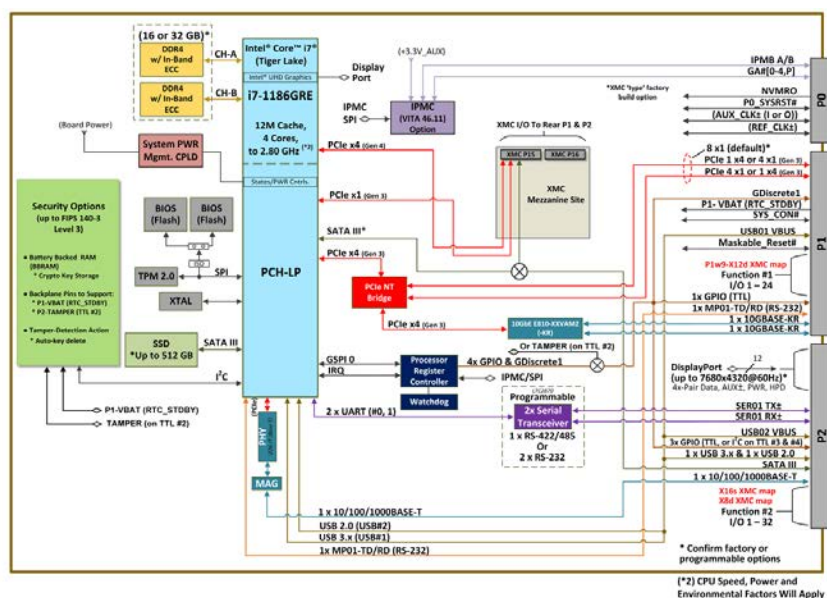




68INT6 3U OpenVPX Single Board Computers

3U OpenVPX™ SOSA™-Aligned SBC with Intel® Core™ i7-1186GRE Processor (Tiger Lake)

The 68INT6 is a SOSA™-aligned 3U OpenVPX Intel® Core™ i7-1186GRE Processor / integrated PCH-LP (Tiger Lake) w/ 4 Cores & 12M Smart Cache running up to 2.8 GHz Single Board Computer that can be configured with up to two Smart I/O and communications function modules (w/ NAI-XMC configuration option). Ideally suited for rugged Mil-Aero applications, the 68INT6 delivers off-the-shelf solutions that accelerate deployment of SWaP-optimized systems in air, land and sea applications.



Features

- **3U OpenVPX (ANSI/VITA 65) SOSA™-Aligned Profiles Supported:**
 - SLT3-PAY-1F1F2U1TU1T14.2.16
 - MOD3-PAY-1F1F2U1TU1T16.2.15-2
 - Data Plane: 1 x4 or 4 x1 PCIe (Gen 3)
 - Expansion Plane: 4 x1 or 1 x4 PCIe (Gen 3)
 - Combined Planes: 8 x1 PCIe (default) (configurable – contact factory)
 - Control Plane (P1): 2 x 10GBASE-KR (1G-KX)
 - Control Plane (P2): 1 x 1GBASE-T
 - XMC P1w9-P1w14: or Module-1 I/O (24)
 - XMC P2w9-P2w16: or Module-2 I/O (32)
 - Support for VITA 42 or VITA 61 XMC connectors
 - Video: Display Port
 - Up to 7680 x 4320 at 60 Hz
 - 1 x USB 3.1 Gen 1 & 1 x USB 2.0
 - Off-board Storage I/F: SATA III
- **Processor/Memory**
 - Intel® Core™ i7 11th Gen (Tiger Lake) to 2.8 GHz w/4 Cores & 12 M Smart Cache;
 - Integrated PCH-LP
 - 32 GB DDR4 SDRAM (2 banks x 16 GB)
 - In-Band ECC memory
 - (up to) 512 GB SATA III SSD
 - Backup-boot NOR FLASH BIOS
- **Security / Cybersecurity (Option)**
 - FIPS 140-3 Level 3 Design Support
 - Crypto-key storage
 - Battery-backed RAM (external V-Bat)
 - Secure Boot
 - Anti-tamper / Tamper Detect & Erasure / Sanitize
- **Motherboard Peripheral I/O**
 - 4 x GPIO (TTL) standard
 - 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 (NAI-XMC Option)**
 - Support for 2 independent modules
 - PCIe interface to function slot #1 (e.g. for 2 additional Gig-E ports option)
 - SATA II interface to function slot #2 (e.g. for 2 TB expansion option)
- **Operating System Support**
 - Wind River® VxWorks® 7.x and HVP
 - Windows®
 - Ubuntu 22.x Linux®
 - DDC-I Deos™
 - Lynx MOSA.ic
 - Green Hills INTEGRITY-178 tuMP
- **Background Built-in-Test**
 - Continuous BIT (as applicable)
- **COSA Architecture**
- **Intelligent I/O library support**
- **Commercial or Rugged Applications**
- **Operating Temperature**
 - Commercial: 0°C to +55°C
 - Rugged: -40°C to +85°C
- **Mechanical Options (ANSI/VITA 48)**
 - Air-cooled; 3U, 5 HP/1.0" pitch
 - Conduction-cooled; 3U, 5 HP/1.0" pitch
- **Power**
 - 30 W Typical*
 - * Depending on number of Cores, Core Speed, DDR speed, OS, Application, etc.

Select up to 2 independent functions for your application

I/O Modules					
Function	Module	Description	Function	Module	Description
Digital IO - Differential Transceiver	<u>DF1</u>	16 CH. Differential I/O, Input: -10 V to +10 V (422), -7 V to +12 V (485) Output: -25 V to +5 V	Relay	<u>RY2</u>	4 CH. Relay, 220V/2A @ 60W/62.5VA (Max), Latching
	<u>DF2</u>	16 CH. 16 Channel Enhanced Differential I/O	Digital IO - TTL,CMOS	<u>TL1</u>	24 CH. TTL I/O, Standard Functionality, Programmable
Discrete IO - Multichannel,Programmable	<u>DT2</u>	16 CH. Discrete I/O, ±80 V Input/Output, Max Iout 600 mA, Isolated/Ch Switch (out)		<u>TL2</u>	24 CH. TTL I/O, Enhanced Functionality, Programmable
	<u>DT3</u>	4 CH. Discrete Hi & Lo Side Switch Output @ 65V/2A (max), external individual supplied VCC & VSS per channel pair	Variable Reluctance	<u>VR1</u>	8 CH. Variable Reluctance Signal Input and General-Purpose Pulse Counter, ±100 V, 100 kHz (max)
Relay	<u>RY1</u>	4 CH. Relay, 220V/2A @ 60W/62.5VA (Max), Non Latching			
Measurement & Simulation Modules					
Function	Module	Description	Function	Module	Description
LVDT RVDT Measurement and Simulation	<u>LD1</u>	4 CH. LVDT/RVDT to Digital, 2-28 Vrms Input, 2-115 Vrms Exc, 47 Hz -1 KHz Freq	IRIG Timecode Receiver and Generator	<u>RG1</u>	1 CH. IRIG Timing Function Interface
	<u>LD2</u>	4 CH. LVDT/RVDT to Digital, 2-28 Vrms Input, 2-115 Vrms Exc, 1 KHz - 5 KHz Freq	Thermocouple and RTD Measurement	<u>RT1</u>	8 CH. Resistance Temperature Detectors (RTD), 2, 3, or 4 wire, 16 Bit Res, 16.7 Hz/Ch
	<u>LD3</u>	4 CH. LVDT/RVDT to Digital, 2-28 Vrms Input, 2-115 Vrms Exc, 5 KHz - 10 KHz Freq		<u>TC1</u>	8 CH. Thermocouple, 4.17 - 470 Hz, ±100 mV A/D
	<u>LD4</u>	4 CH. LVDT/RVDT to Digital, 2-28 Vrms Input, 2-115 Vrms Exc, 10 KHz - 20 KHz Freq		<u>TR1</u>	8 CH. Thermocouple (TCx) & Resistance Temperature Detectors (RTD), programmable per channel
	<u>LD5</u>	4 CH. LVDT/RVDT to Digital, 28-90 Vrms Input, 2-115 Vrms Exc, 47 Hz - 1 KHz Freq	Strain Gauge Measurement	<u>SG1</u>	4 CH. Strain Gauge, 4.7 Hz - 4.8 KHz, Measurement, Conventional 4-Arm Bridge
Communication Modules					
Function	Module	Description	Function	Module	Description
ARINC Communications	<u>AR1</u>	12 CH. ARINC 429, 100 KHz or 12.5 KHz, RX/TX, 256 Word Tx/Rx Buffer	MIL-STD-1553B	<u>FTC</u>	4 CH. MIL-STD-1553 (AMC), BC, RT, BM, BM/RT, 128 KB RAM Per Channel, Transformer Coupled
	<u>AR2</u>	1 CH. ARINC 568 (CH-1, RX & TX) & 1 Channel ARINC 579 (CH-2, Programmable RX or TX), 1024-Word TX & RX Buffers per Ch.	MIL-STD-1760	<u>FTJ</u>	1 CH. MIL-STD-1760 (1553), BC, RT, BM, BM/RT, 128 KB RAM, Transformer Coupled
CANBus Communications	<u>CB1</u>	8 CH. CANBus, CAN 2.0 A/B, 16 K RX/TX Buffer, 1 Mb/s Max Data Rate		<u>FTK</u>	2 CH. MIL-STD-1760 (1553), BC, RT, BM, BM/RT, 128 KB RAM Per Channel, Transformer Coupled
	<u>CB2</u>	8 CH. CANBus, J1939, 16 K RX/TX Buffer, 500 kb/s Max Data Rate	IEEE 1394 (FireWire)	<u>FW1</u>	2 CH. (nodes), IEEE 1394b (Firewire), tri-port per channel, including TLIM
	<u>CB3</u>	8 CH. CANBus, CAN 2.0 A/B (CB1) or J1939 (CB2) protocol layer programmable per channel		<u>FW2</u>	2 CH. (nodes), IEEE 1394b (Firewire), tri-port per channel, direct (no TLIM)
Ethernet NIC Interface	<u>EM1</u>	2 CH. Dual Ethernet I/F, Intel 82850, 10/100/1000	Serial Communications	<u>SC3</u>	8 CH. (max) RS-232/422/485 Serial Communications or GPIO, Programmable, Non-isolated
MIL-STD-1553B	<u>FTA</u>	1 CH. MIL-STD-1553 (AMC), BC, RT, BM, BM/RT, 128 KB RAM, Transformer Coupled		<u>SC5</u>	4 CH. RS-232/422/485 communications, isolated per channel and from SYS GND
	<u>FTB</u>	2 CH. MIL-STD-1553 (AMC), BC, RT, BM, BM/RT, 128 KB RAM Per Channel, Transformer Coupled		<u>SC6</u>	4 CH. RS-232/422/485 communications, individual SYS GND provided per channel (non-isolated)
Combination Modules					
Function	Module	Description	Function	Module	Description
Combo	<u>CM5</u>	2 CH. Dual-redundant MIL-STD-1553 & 8 Channel ARINC 429/575, 100 KHz or 12.5 KHz, RX or TX, 256 Word Tx/Rx Buffer	Combo	<u>CM8</u>	2 CH. Dual-redundant MIL-STD-1553 & 12 Channel Discrete I/O, 0-60 VDC Input/Output, Max Iout 500 mA - 2 A, Source/Sink (out)

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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