Accelerate Your Time-to-Mission™

IVHM-33CP0C - Integrated Vehicle Health & Monitoring System

Made in the USA
Certified Small Business

**Off-the-shelf, 3U, 3-slot chassis designed for remote rugged environment operation**

NAI designs Integrated Vehicle Health Monitoring systems (IVHM) around core COTS technology building blocks, offering our customers readily available, interoperable, field-proven systems (or subsystems) designed to withstand the rigors of harsh, SWaP-constrained environments. The IVHM-33CP0C is a pre-configured rugged system with a high-performance, low power ARM® Cortex®-A9 processor. It ideally suited to support a multitude of functions that require high-density, multi-channel, programmable communications, temperature measurement and I/O consisting of: ARINC 429/575; A/D Conversion; CANBus (CAN 2.0 A&B or J1939); Dual-Redundant, Quad Channel MIL-STD-1553B; RTD Measurement RS-232/422/485 Serial Communications; Discrete I/O and Dual-Port Gig-E Ethernet.

The IVHM-33CP0C delivers an off-the-shelf, preconfigured solution that accelerates deployment of SWaP-optimized systems in rugged air, land and sea applications. Pairing the IVHM-33CP0C hardware with your application will accelerate your time to mission!

4.78"

8.71"

4.71"

ARM Cortex-A9 SBC 2 x 10/100/1000Base-T
12 Channel Tx/Rx ARINC 429/575 Interface
8 Channel CANBus 2.0 A/B or J1939 Interface
Quad Channel / Dual Redundant MIL-STD-1553

16 Channel ±1.25 to ±10.0 VDC FS or 0-25 mA 16-bit SAR A/D
16 Channel ±6.25 to ±50 VDC FS A/D 16-bit SAR A/D
16 Channel ±12.5 to ±100 FS VDC A/D 16-bit SAR A/D

8 Channel RTD Measurement
24 Channel 0 to 60 VDC Discrete I/O (500mA/Ch.)
8 Channel RS-232/422/485 Async Serial

28 VDC MIL-STD-704A/1275D PSU
with ≥ 50 ms Holdup

BACKPLANE

J1 128 pins I/O

J2 128 pins I/O

J3 128 pins I/O

J4 128 pins I/O Power Input

Features

- Meets or exceeds MIL-STD-461F and MIL-STD-810G requirements
- VxWorks, Xilinx PetaLinux OS
- Built-in-Test (BIT)
- < 10 lbs. typical
- COTS/NDI
- COSA® architecture
- Conduction cooled SWaP
- 28 VDC power @ 45 W, typical

IVHM-33CP0C Data Sheet Rev. C1
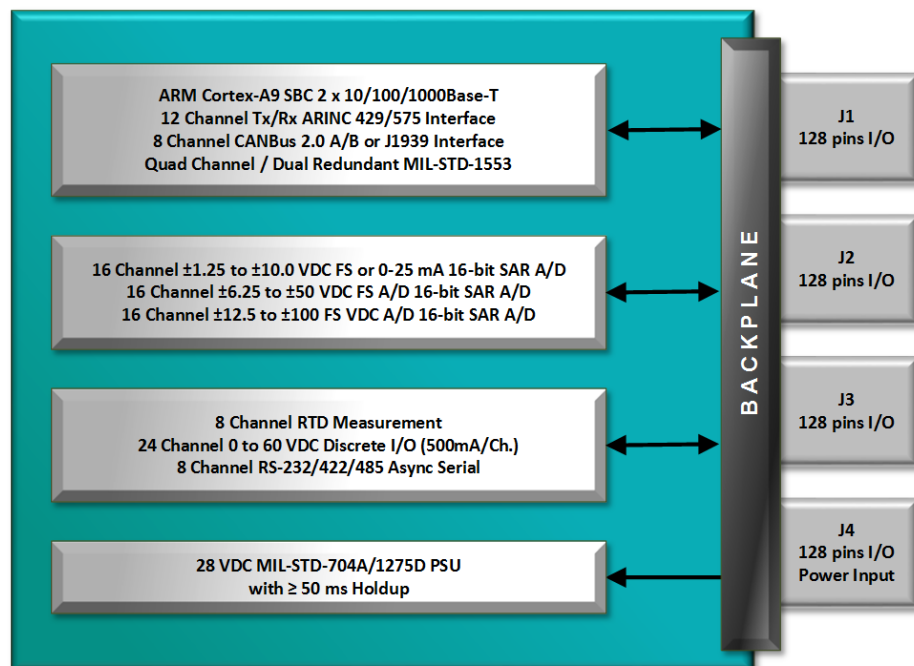
Architecture

With our exclusive, modular, interoperable Custom on Standard Architecture™ (COSA®), NAI's integrated vehicle health & monitoring (IVHM) systems seamlessly integrate with our intelligent multifunction I/O boards, containing highest packaging density and greatest flexibility of any multifunction I/O modules in the industry, and can be deployed rapidly with no NRE.

Applications

With decades of experience in embedded rugged electronics, NAI's flexible, modular Integrated Vehicle Health Monitoring (IVHM) systems are a perfect fit for a number of military/aerospace applications where compact, low-power systems are required. NAI's IVHM systems combine a range of diagnostic tools within a single platform and provide around-the-clock, intelligent diagnostics on critical mission, air, land and see applications including:

- Fault detection and diagnostics
- Proactive maintenance and failure prevention
- Data management

Continuous Background Built-In-Test (BIT)

BIT 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, and reduces life-cycle costs and keeps your system mission-ready.

Single-Source Efficiency

Eliminate man-months of integration with a configured, field-proven system from NAI. Requirements review through 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.

Software

Software support includes VxWorks® and Xilinx® PetaLinux. All I/O and communications library Software Support Kits (SSKs) are supplied free of charge.

Target Environment

All products are designed to operate under extreme temperature, shock, vibration and EMI environments. NAI's systems are designed to meet or exceed MIL-STD-461F and MIL-STD-810G requirements.

MIL-STD-461F requires proper shielded cables and systems practices.
Specifications are subject to change without notice.
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