RDC-35CP0B – Remote Data Concentrator

Made in the USA
Certified Small Business

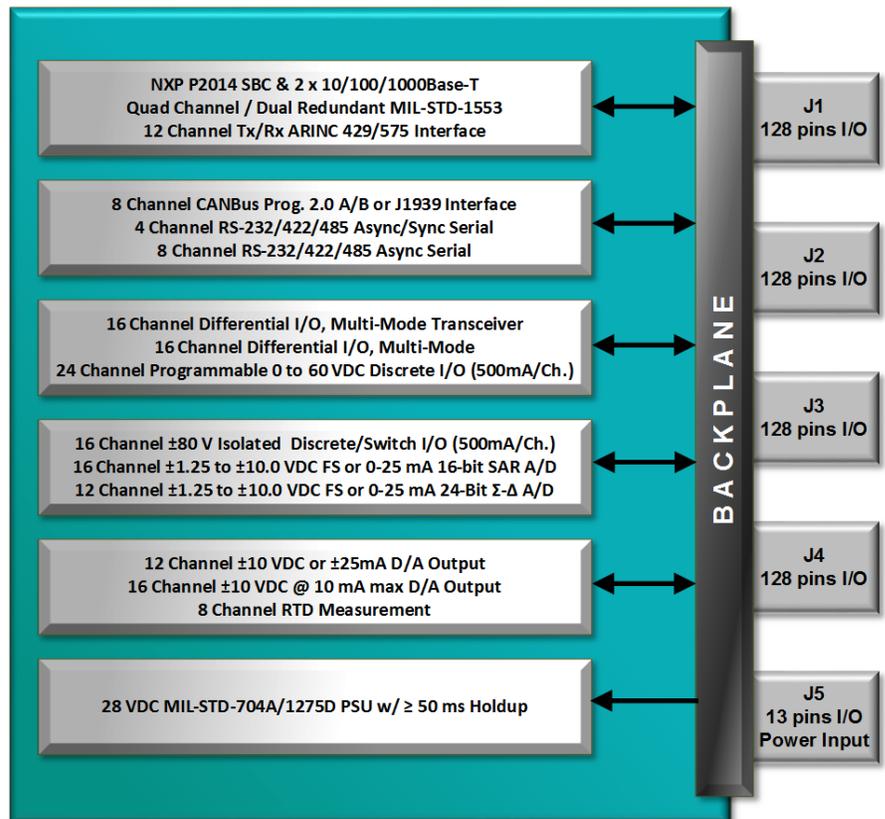**Off-the-shelf, 3U, 5-slot chassis designed for remote rugged environment operation**

NAI designs Remote Data Concentrators (RDC) around core COTS technology building blocks, offering our customers readily available, interoperable, field-proven systems (or subsytems) designed to withstand the rigors of harsh, SWaP-constrained environments. The RDC-35CP0B is a pre-configured rugged system with a PowerPC™ NXP® P2041 processor. It is ideally suited to support a multitude of military/aerospace applications that require programmable communications and I/O with RS-422/423/485 Serial Communications; Dual-Redundant, Quad Channel MIL-STD-1553B; ARINC 429/575; Discrete I/O; Differential Transceiver; A/D Conversion; D/A Conversion; RTD Measurement; CANBus (CAN 2.0 A&B or J1939) and Dual-Port Gig-E Ethernet.

The RDC-35CP0B delivers an off-the-shelf, configured hardware solution that accelerates deployment of SWaP-optimized systems in harsh air, land and sea environments. Pairing the RDC-35CP0B hardware with your application will accelerate your time to mission!

Features

- Meets or exceeds MIL-STD-461F and MIL-STD-810G requirements
- VxWorks OS
- < 15 lbs. typical
- COTS/NDI
- Network Centric
- Built-in-Test (BIT)
- COSA® architecture
- Conduction cooled SWaP
- 28 VDC power @ 75 W, typical

NXP P2014 SBC & 2 x 10/100/1000Base-T
Quad Channel / Dual Redundant MIL-STD-1553
12 Channel Tx/Rx ARINC 429/575 Interface

8 Channel CANBus Prog. 2.0 A/B or J1939 Interface
4 Channel RS-232/422/485 Async/Sync Serial
8 Channel RS-232/422/485 Async Serial

16 Channel Differential I/O, Multi-Mode Transceiver
16 Channel Differential I/O, Multi-Mode
24 Channel Programmable 0 to 60 VDC Discrete I/O (500mA/Ch.)

16 Channel ±80 V Isolated Discrete/Switch I/O (500mA/Ch.)
16 Channel ±1.25 to ±10.0 VDC FS or 0-25 mA 16-bit SAR A/D
12 Channel ±1.25 to ±10.0 VDC FS or 0-25 mA 24-Bit Σ-Δ A/D

12 Channel ±10 VDC or ±25mA D/A Output
16 Channel ±10 VDC @ 10 mA max D/A Output
8 Channel RTD Measurement

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

BACKPLANE

J1
128 pins I/O

J2
128 pins I/O

J3
128 pins I/O

J4
128 pins I/O

J5
13 pins I/O
Power Input

Architecture

With our exclusive, modular, interoperable Custom on Standard Architecture™ (COSA®), NAI's integrated RDCs 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

Designed to consolidate inputs from a military aircraft's systems and sensors and distribute them via a full duplex switched Ethernet network, NAI's Remote Data Concentrators (RDC) serve as the "central nervous system" of a military aircraft. Additionally, these systems host the avionics and utilities functions, eliminating several boxes and hundreds of pounds of cable. NAI's RDUs perform with a high level of stability and accuracy on military vehicles operating in hostile environments and are a perfect fit for a number of avionics applications including fixed-wing, rotorcraft and unmanned aerial vehicle (UAV) platforms where compact, low-power systems are required.

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 Wind River® VxWorks®. 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 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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