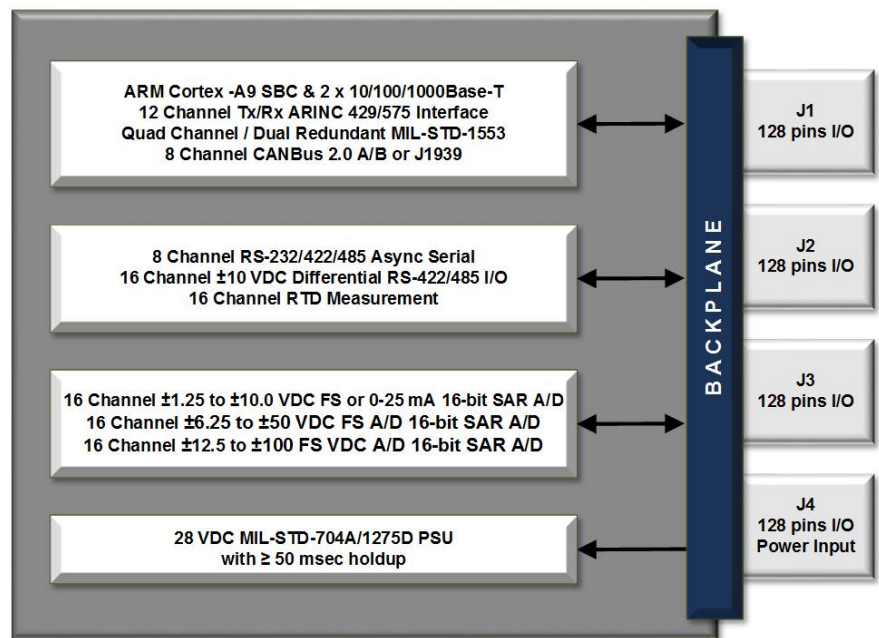# DAQ-33CP0G – Data Acquisition System

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

NAI designs Data Acquisition Systems (DAQ) 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 DAQ-33CP0G is a pre-configured, rugged system with a high-performance, low power ARM® Cortex®-A9 processor. It is ideally suited to support a multitude of military/aerospace data acquisition applications that require high-density, multi-channel programmable ARINC 429/575; Dual-Redundant, Quad Channel MIL-STD-1553B; CANBus (CAN 2.0 A&B or J1939); A/D Conversion; RTD Measurement; RS-232/422/485 Serial Communications and Dual-Port Gig-E Ethernet.

The DAQ-33CP0G delivers an off-the-shelf, preconfigured hardware solution that accelerates deployment of SWaP-optimized systems in rugged air, land and sea applications. Pairing the DAQ-33CP0G hardware with your application will accelerate your time to mission!

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

8 Channel RS-232/422/485 Async Serial
16 Channel ±10 VDC Differential RS-422/485 I/O
16 Channel RTD Measurement

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

28 VDC MIL-STD-704A/1275D PSU
with ≥ 50 msec 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**
- **Continuous Background Built-in-Test (BIT)**

- **< 10 lbs. typical**
- **COTS/NDI**
- **COSA® Architecture**

- **Conduction cooled SWaP**
- **28 VDC power @ 45 W, typical**

Architecture

With our exclusive, modular, interoperable Configurable Open Systems Architecture™ (COSA®), NAI's data acquisition 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 Data Acquisition (DAQ) systems are a perfect fit for a number of military/aerospace applications where compact, low-power systems are required, including:

- Flight Test Instrumentation
- Engine Power Assurance
- Vehicle Usage Monitoring
- Crew Controls
- Vehicle Health Monitoring

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 lifecycle costs and keeps your system mission-ready.

Single-Source Efficiencies

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

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 system practices

Specifications are subject to change without notice.

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Certified Small Business