



Featured Application Story

I-8094: 4 Axis Stepping / Pulse type Servo Motor Control Module

- Independent Motion Axis Control
- Onboard Processor
- 2/3 Axis Linear Interpolation
- 2 Axis Circular Interpolation
- T/S Curve Acceleration / Deceleration
- Variable Synchronous Actions
- Automatic Homing



ICP DAS Motion Control Application

An OEM Customer approached ICP DAS with the need of a **20-Axis Motion Control System, with 250+ I/O Points**. The customer stressed that reliability and precise control were the main attributes needed for a successful integration. ICP DAS chose to integrate a multifaceted approach; allowing robust and reliable control, and environmental resilience contained in a user friendly platform.

ICP DAS decided to implement **I-8094: High Speed, 4 Axis Stepping / Pulse type Servo Motor Control Module**; their newest motion control module because motion control was the most pertinent element of the application. It can be used in conjunction with any of the ICP DAS I-8000, Wincon, and Lincon series programmable automation controllers, and is suitable for almost any motion control application.

ICP DAS drastically cut down the amount of devices needed to perform the full 20-axis motion control by implementing the **I-8094** Motion Controller. With just five **I-8094** modules installed, all 20 axes were capable of independent control, while maintaining a compact, modular footprint.

ICP DAS used the **I-8430** rack mount PLC controller to not only house the motion control modules, but also handle embedded control and high speed digital data acquisition. With a robust controller in place, ICP DAS chose to implement their new line of FRnet products to handle the requirement for the high speed digital signals. **FR-net** is an innovative industrial field bus, capable of high speed deterministic control, real I/O synchronization, non-protocol communication, and much more. By implementing the FR-net I/O infrastructure, ICP DAS enabled transfer speeds of up to 250 kbps per 2.88ms; thus offering superior high speed data analysis.

[Click here](#) to read the full application story.

FAQ of the Week

Q: What is FRnet?

A: **FRnet** is a two-wire serial communication bus wired similar to RS-485. **FRnet device** communication is achieved using a multi drop method. This new method does not use the question/answer approach like many RS-485 communication methods. Instead, it uses fixed scan time to actively transmit data. Since there's no need for a CPU to process communication protocol, **FRnet** can achieve high-speed data transmission in an isochronous manner. [Click here](#) to read more about FRnet.

Do You Have an Application Story to Share with Us?

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[Click here](#) to contact our Technical Support Engineers so we can assist you!

[Click here](#) to take a look at our product support & documentation on our web page.

Quick Start Kits

[Click here](#) to see our Quick Start Kits: the ideal starting point for application specific projects! **ICP DAS USA** quick start and learning kits provide a revolutionary way to decrease development time in one easy to use package!

Featured Product



16 Port Isolated Digital Input Distributed I/O Module

FR-2053: \$155

[Add to Cart](#)

FR-2053 provides a 16 channel isolated photo-coupler digital input in the FRnet. I/O data transmission is controlled by the FRnet control chip (developed by ICPDAS). It was designed to provide deterministic high speed network communication. Anti-noise circuitry has been built into the FRnet control chip to ensure communication reliability.

FR-2053 Features

- High Transmission Reliability
- No software overhead on protocol
- Simple synchronization mechanism
- Isochronous DI/DO processing
- DIN-Rail mountable
- Supports broadcasting (1: n data transmission)
- Power consumption: 2.0 W (Max.)
- Operating temperature: 0° C to 55°C Storage
- Storage temperature: -20° C to 65°C
- Operating humidity: 35% to 85% (non condensing)

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High Speed FRnet Equipped Embedded Ethernet Controller

I-7188EF-016: \$450

[Add to Cart](#)

I-7188EFH-016 offers users a multitude of connectivity and networking options in a compact and robust embedded control format. FRnet communication is a determinant of real time. It's extremely fast for central control or distributed I/O control. Wiring is fast and easy via two twist wires which saves money on cabling and installation.

I-7188EF-016 Features

- Programmable in C Language
- Supports a variety of TCP/IP features, including: TCP, UDP, IP, CMP, ARP, RARP
- Internal expansion bus allows for multiple capability configurations
- Remote Configuration
- Communication Speed: 1Mbps
- Real Time Clock
- Innovative Token-stream communication technology
- Built-in self-tuner ASIC controller on RS-485 port
- +10 ~ +30V DC voltage requirement
- Operating temperatures: -30°C ~ +55°C

*Offer not valid for resellers and distributors.