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# EtherNet/IP RapID™ Platform Network Interface

Connectivity Solution for 2-Port Adapters

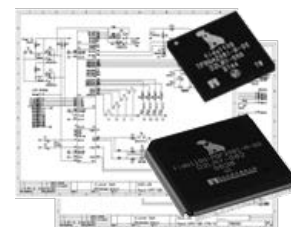


## The RapID Platform Network Interface is a complete EtherNet/IP Industrial Ethernet interface available as a module or embedded design

The interface contains everything needed including the communications controller, protocol stacks, Flash, RAM, and analog driver so the user does not need to know anything about the EtherNet/IP protocol. All EtherNet/IP capabilities are encapsulated on this small form factor interface, and can be integrated into any type of automation equipment from complex control to a simple sensor or actuator. For small form factor applications the module's design can be integrated directly into the field device. The *RapID Network Interface* connects to a "Host" processor via a UART or 16-bit Parallel Interface. EtherNet/IP communication has been certified by ODVA, passed several ODVA-sponsored Plugfests, and tested on the bus with numerous applications to provide problem-free operation with virtually any EtherNet/IP controller.



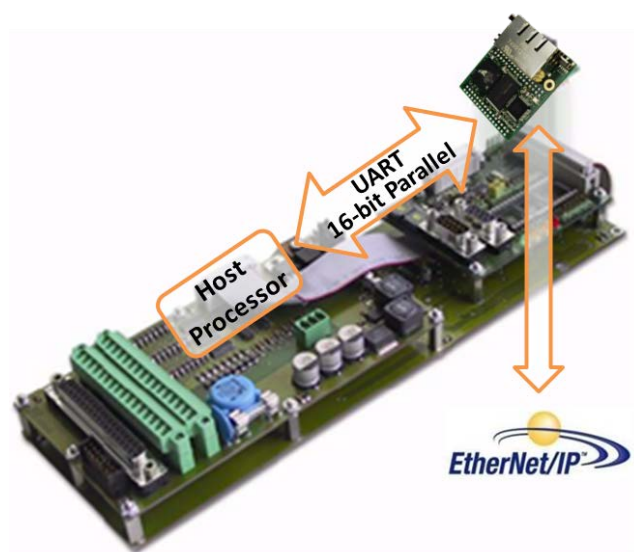
-or-



## Easy Hardware and Software Integration

The *RapID Network Interface* can be integrated into a design as either a module or an embedded design. As a module, the *RapID Network Interface* plugs into a board using standard 2.54 mm pitch through-hole pins. When designing-in the module, hardware integration is as easy as connecting Power/Ground/Reset and

interfacing the Host processor to the UART or 16-bit Parallel interface. The Ethernet physical interface is ready to plug into the network. Software for the module is provided as firmware that is resident on the flash.



As an embedded design, the *RapID Network Interface* connects to a board design using the schematics provided. Also provided are the Bill of Materials and example layouts to minimize the hardware design effort. Software for the embedded design is provided as firmware that is downloaded to the flash. Whether using the *RapID Network Interface* as a module or an embedded design, no software development is required and there are no license fees or royalties.

Software integration with a Host processor is also easy. Messages passed between the Host and *RapID Network Interface* follow a common interface definition when using either the UART or 16-bit Parallel interface. This interface simplifies communication for sending or receiving cyclic, acyclic data and alarms. Example C-code is provided to minimize integration effort on the Host.

## Easy Network Integration

*RapID Network Interface* comes pre-loaded with the latest firmware for EtherNet/IP communication and includes PriorityChannel™ technology to ensure reliable, real-time network performance. Also included are

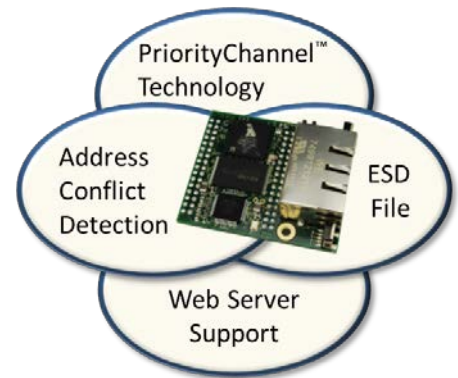
# EtherNet/IP RapID™ Platform Network Interface

## Connectivity Solution for 2-Port Adapters



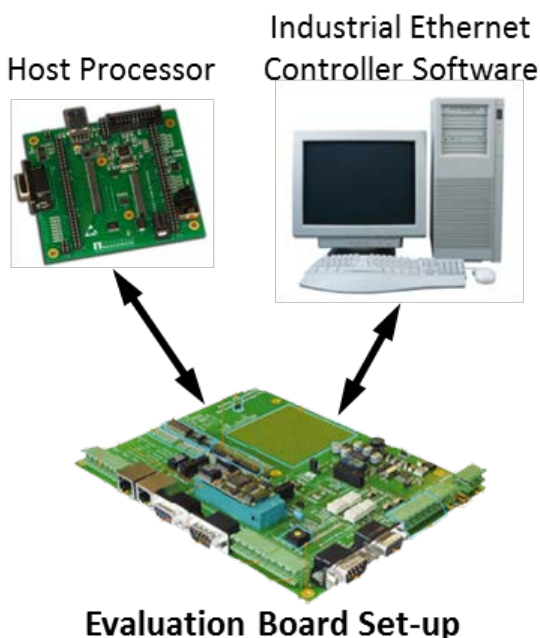
the latest features for the EtherNet/IP protocol specification including Address Conflict Detection (ACD). This feature is useful so devices can be easily added or removed from the network. When a device is added to a network, it is sometimes useful to retrieve information directly from the device. A Web Server is provided for this purpose. The server can be customized to show device and company-specific information.

An ESD file is required for EtherNet/IP. This file describes a device's capabilities to the controller. The example ESD file provided can be tailored to describe the exact features of the final product.



### Easy Evaluation, Fast Product Development

The Evaluation Kit available for the *RapID Network Interface* provides quick assessment for interfacing a Host processor to the module. Simply connect the Host processor development board to the *RapID Network Interface* evaluation board via the UART or 16-bit Parallel interface. Once Host-side communication is established, EtherNet/IP communication can be evaluated using 3rd-Party, PC-based Tools. The communication path between Host processor and EtherNet/IP controller can be completely verified before integrating the module into the actual automation equipment hardware.



| Parameter                 | Details   |
|---------------------------|---|
| Host Processor            | Any CPU or DSP  |
| Host Processor Interfaces | UART (up to 520 kBaud)<br>16-bit Parallel (up to 12.5 Mbps)   |
| Network Interface         | Data Transport: IEEE 802.3  |
|                           | Data Rate: 10/100 Mbps  |
|                           | Ports: 2  |
| Environmental Conditions  | -40C to +85C  |
| Power Supply              | Voltage: 3.3 VDC  |
|                           | Power consumption: 1.3W   |
| TCP/IP                    | ICMP, IGMP, ARP, SNTP, BSD 4.4A socket, DNS, BOOTP, DHCP, TELNET, FTP, TFTP, HTTP (server & client), CGI, SNMP                    |
| EtherNet/IP               | Cyclic Input Data: 504 bytes<br>Cyclic Output Data: 504 bytes   |
|                           | Cycle time: 1 ms (min.)   |
|                           | Standard Objects: Identity Object, Message Route Object, Assembly Object, Connection Manager, Ethernet Link Object, TCP/IP Object |
|                           | DHCP, ACD   |
| Compliance                | RoHS, CE, ODVA  |