Profinet RapID™ Platform Universal Gateway

Connectivity Solution for 2-Port, Class B Devices

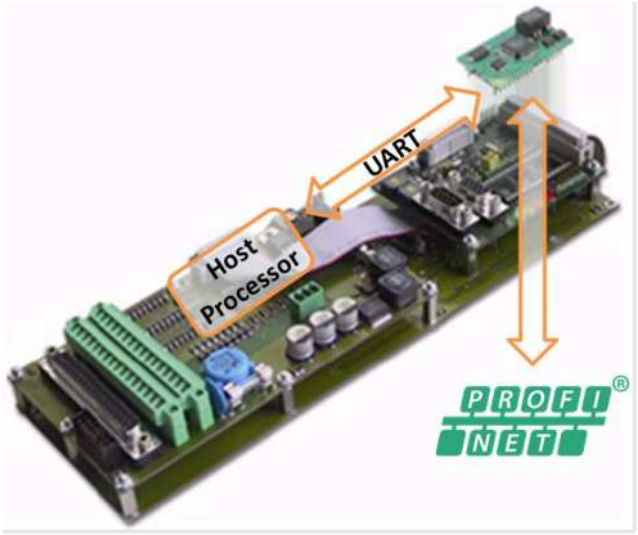
The *RapID Platform Universal Gateway* combines all analog and digital signals for the Profinet Industrial Ethernet interface on a 45 x 25 mm form factor

The gateway 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 Profinet protocol. All Profinet capabilities are encapsulated on this small, DIL-32 form factor device, and can be integrated into any type of automation equipment from complex control to a simple sensor or actuator. The *RapID Universal Gateway* connects to a "Host" processor via a UART interface or it can be operated stand-alone. In either type of operation, the Profinet communication has been Class B certified at an accredited Profinet Interface Center and tested on the bus with numerous applications to provide problem-free operation with virtually any Profinet controller.

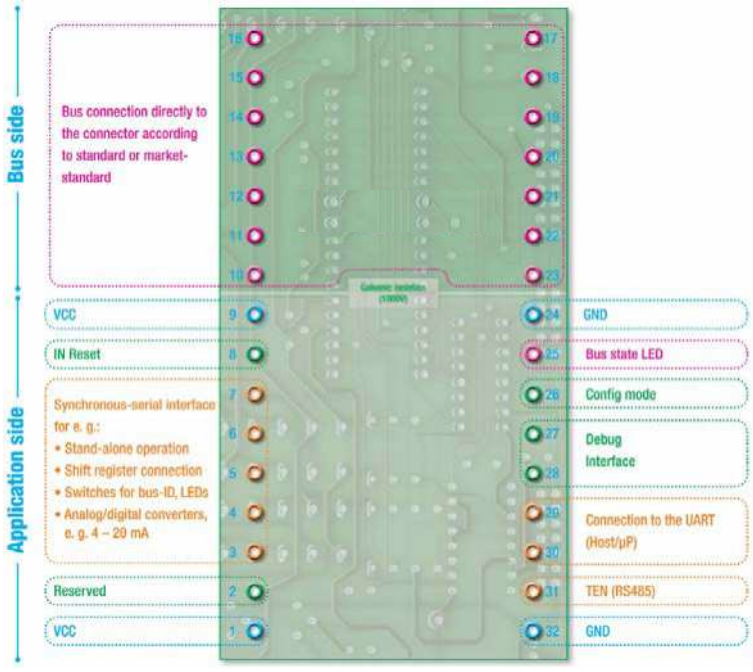


Easy Hardware and Software Integration

The *RapID Universal Gateway* drops into a board using a standard DIL-32 form factor. Both the hardware and software interfaces are standardized and functionally identical. As a result, different *RapID Universal Gateway* versions are exchangeable, and by socketing the board to accept the module allows for easy configuration of other protocols. When designing-in *RapID Universal Gateway*, hardware integration is as easy as connecting Power/Ground/Reset, interfacing the Host processor to the UART, and hooking up to the network-side physical interface components. For stand-alone operation there is a Synchronous Serial Interface for connecting switches, analog-to-digital converters, or shift registers.



Software integration with a Host processor is also easy since no re-programming is required on the Host processor and the Host firmware is never touched. The *RapID Universal Gateway* conforms to the Host messages passed over the UART by using a "script". This script transforms the UART messages into the appropriate Profinet messages. Simply write a script to interpret the UART messages and the field device is ready to talk on the network.



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Easy Network Integration

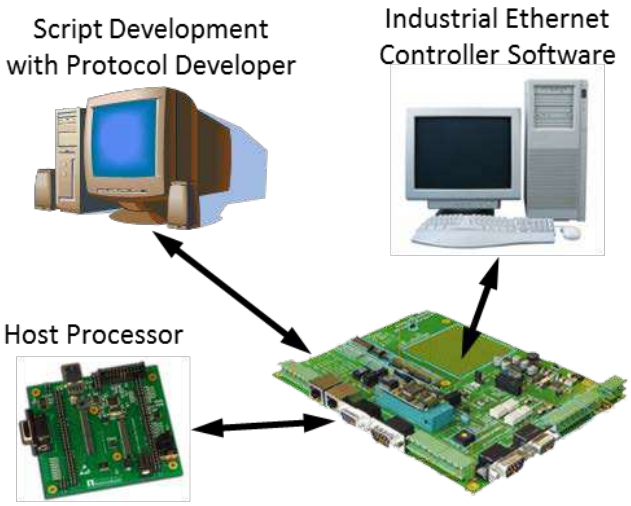


The Profinet *RapID Universal Gateway* comes with PriorityChannel™ technology to ensure reliable, real-time network performance. It is Class B certified and includes support for the Link Layer Discovery Protocol (LLDP) so controllers can identify the devices attached to the network. Also included is the Simple Network Management Protocol (SNMP), along with the required Management Information Bases (MIBs), to support network configuration and diagnostics. The two protocols work together 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.

A GSDML file is required for Profinet. This file describes a device's capabilities to the controller. The example GSDML file provided can be tailored to describe the exact features of the final product.

Easy Evaluation, Fast Product Development

The Evaluation Kit available for *RapID Universal Gateway* provides quick assessment for interfacing a Host processor to the module. Simply connect the Host processor development board to the *RapID Universal Gateway* evaluation board via the UART interface. The free Protocol Developer tool is used to write a script that describes the Host processor UART messages. Once Host-side UART communication is established using the script, Profinet communication can be evaluated using 3rd-Party, PC-based Tools. The communication path between Host processor and Profinet controller can be completely verified before integrating the module into the actual hardware.



Evaluation Board Set-up

Parameter	Details
Host Processor	Any CPU or DSP
Host Processor Interfaces	UART (up to 520 kBaud)
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
Profinet	Cyclic Input Data: 1440 bytes Cyclic Output Data: 1440 bytes
	Cycle time: 1 ms (min.)
	Alarm Types: Process, Diagnostic, Return of Sub Module
	DCP, LLDP, VLAN Priority
Compliance	RoHS, CE, PI