

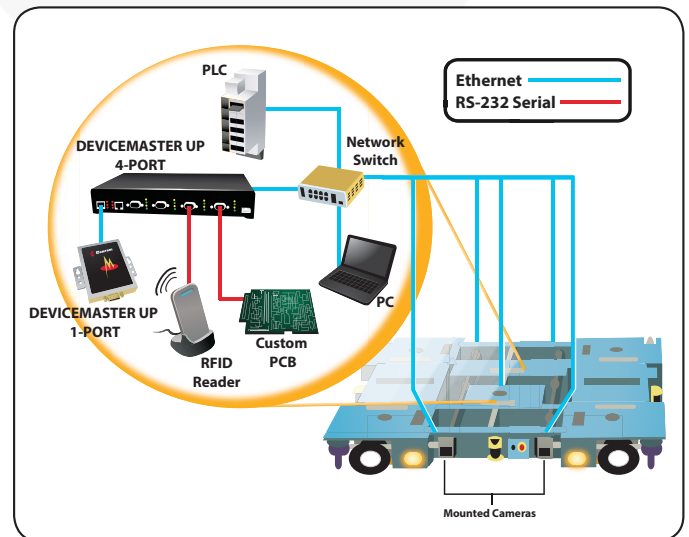


## Ward Systems Inc. Auto-Guided Manufacturing Vehicle

An industrial automation manufacturing company located in Grass Valley, California, needed to create and design a working communication system to connect multiple devices on auto-guided machines. Ward Systems Inc., designs, manufactures and distributes automated pallet handlers used in warehouse and industrial settings.

In order for the handlers to be automatically guided through a warehouse with precision, cameras attached to the vehicle itself must be as accurate as possible. These cameras also need to interact with a PLC running Modbus TCP/IP, which writes and reads data to and from the cameras as well as controlling the cameras' power for efficient battery usage.

As shown to the right, five cameras needed to communicate with a PLC on each handler. Ward Systems decided to use Control's DeviceMaster UP 4-Port and a daisy-chained DeviceMaster UP 1-Port to provide support for each camera. All of the cameras are directly connected to one network switch, which is then connected to the DeviceMaster UP 4-Port and DeviceMaster UP 1-Port. The PLC is also connected to the network switch, along with a detachable PC used for configuration and programming. An RFID reader and a custom PCB board connect to the two remaining ports on the DeviceMaster UP 4-Port.



The cameras on the pallet handlers support raw/ASCII data, while the PLC supports Modbus TCP/IP. Control's DeviceMaster UP enables communication between the two different protocols to make the entire system a success.

Control's DeviceMaster UP is designed to provide innovative PLC to device connectivity. The DeviceMaster UP provides EtherNet/IP, Modbus/TCP, Modbus RTU/ASCII, and PROFINET IO connectivity to a wide variety of devices. A highly advanced raw/ASCII device interface functionality simplifies PLC programming and ensures robust operation. These features greatly simplify connecting devices such as bar code scanners, RFID readers, weigh scales, vision systems, printers, encoders and sensors to PLCs. The DeviceMaster UP's many unique features provide connectivity options and flexibility not provided by other gateway products.

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# DEVICEMASTER FAMILY



## KEY FEATURES AND BENEFITS

- Protocol Flexibility — EtherNet/IP, PROFINET IO, Modbus/TCP, Modbus/RTU, Modbus/ASCII
- DualConnectPlus™ Technology—simultaneously connects both serial and Ethernet TCP/IP devices to PLCs and/or applications
- Web-based configuration—makes configuration changes quick and easy
- Large received packet support — up to 1518 bytes serial and 2048 bytes Ethernet TCP/IP
- Intelligent packet identification — intelligent start/end transmission character handling
- Received packet size control — truncate or drop oversized packets
- Low latency — typically less than 10 ms
- Diagnostic Capabilities — informative message logs, communication, and status pages
- Daisy Chaining — on select models, dual Ethernet ports for daisy chaining network connections between multiple units
- Variable power input—eliminates the need for power converters
- Temperature rated for extreme conditions—operating temperature of -37° to 74°C enables DeviceMaster UP to function in a wide variety of harsh environments
- Rugged housing—with panel, rack, and DIN rail mounting options
- PortVision™ Plus enterprise monitoring and management software—enables user to view status, update firmware, and resolve issues remotely
- RoHS 2 compliant under CE
- Available Models —1-port, 2-port 1E, 2-Port 2E, 4-port, and embedded



### Warranty Information

Control offers a 30-day satisfaction guarantee and 5-year limited warranty.

### Sales Support

+1.763.957.6000  
sales@comtrol.com

### Technical Support

+1.763.957.6000  
www.comtrol.com/support

### Email, FTP, and Web Support

info@comtrol.com  
ftp.comtrol.com  
www.comtrol.com