

Applying FieldServers in Embedded Applications

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What is an Embedded FieldServer?

An Embedded FieldServer is a communications board that allows new and legacy equipment to communicate using any of the vast, and growing, selection of new, and legacy industrial protocols available today, so that the equipment can interoperate with a range of other devices, PLCs, SCADAs, MMIs and other third party controllers.

The benefit of using a FieldServer protects the designer of new equipment from having to make a limiting decision as to what protocol or protocols to select and support for their equipment, at the same time as allowing greater market penetration as well as reduced time to market.

For the manufacture of legacy equipment, FieldServers give those devices a new lease on life and fresh applications.

What is “Embedded Equipment” from FieldServer Technologies’ Point of View?

Any microprocessor or microcomputer based control or monitoring system, that is typically a box on a wall, mounted in a 19” rack, installed within a machine or installed with other equipment on a site, and has at least a serial port, can be considered an embedded equipment.

A communications driver can be selected from a large, and growing, library that FieldServer Technologies has developed, or a new driver can be written, that will allow the FieldServer to fetch data and send commands to the embedded equipment.

The “other side” of the FieldServer will have a second driver, also selected from the FieldServer Technologies library, supporting a different protocol, or possibly even multiple protocols.

This means that by designing a controller to include a FieldServer, the manufacturer, VAR or OEM can be assured that whatever protocol the end user desires to use, downloading the appropriate drivers will allow the manufacturer to deliver to specification.

It also means new life can be breathed into legacy equipment, by immediately making the data accessible to the growing number of protocols that are emerging in the market today.

A further benefit of selecting an embedded FieldServer, is that the task of maintaining and keeping any protocol driver up to date is FieldServer Technologies’ responsibility, relieving the manufacturer of having to staff engineers who are not adding any new competitive features to their equipment.

In appropriate applications, FieldServer Technologies is even prepared to license the circuit schematic for manufactures to embed the FieldServer within their controller.

Also in appropriate applications, if the embedded controller has enough CPU and memory resources, the FieldServer kernel and drivers can be adapted to run on the controller hardware, eliminating the cost of the hardware components completely.

The Driver Library

FieldServer Technologies believes that the value of the FieldServer is the driver library, and we will continue to concentrate on developing, testing and maintaining these drivers to the highest possible standards. See the current driver list at www.fieldserver.com/drivers.html

We have a two-pronged approach to expanding the driver library. The first approach is to aggressively develop legacy drivers to allow the greatest coverage of interoperability options. e.g. Modbus Plus.

The other approach is to develop ‘modern’ drivers e.g. ODVA’s Ethernet/IP, RTI’s NDDS, and then add value by tracking the inevitable upgrades and improvements to the published standards, so that the embedded equipment manufacturers do not have to do this maintenance chore themselves, they can simply download the latest driver off the web and install it in FLASH memory on the FieldServer.

Some notes

In the case of there being no protocol already installed in the embedded equipment, FieldServer Technologies has made the manufacturer’s life easier by defining the “Easy Link” protocol, which is a robust, simple and easy to implement ASCII based, human readable protocol that can quickly be adapted for installation in the embedded equipment.

The FieldServer can be installed as part of a PC/104 stack, allowing compact and mechanically consistent mounting in PC/104 applications.



It can also be installed on a DIN rail, rack, wall or table top, where FieldServer Technologies provides the enclosure and mounting clips or hardware.

