Application Brief
2020

Emerging Technologies

Field Module Test System

Brief Description:

Emerging Technologies, LLC. was called upon to develop a test system for a motor field control module. The customer requested a stand-alone, non-PC based system. The test requires up to 600Vdc at up to 42 amps into a resistive/reactive load. Special custom signal generation, including configurable PWM, was required. Additionally, a manual test mode was required.

Emerging Technologies, LLC. implemented a version of it's PicMicro based Embedded Test System Controller. This controller interfaced additional standard I/O as well as custom developed interface PCB's. A barcode reader is used to track serial numbers and log date information. Configuration and results data of the multi-step test sequence are stored to a removable SD card in a standard FAT32 format. Additionally, a PC-based configuration application was provided to generate a configuration file (stored on the SD card) for operator requested read-back by the embedded controller.

Emerging Technologies, LLC. prepared a design package for customer review prior to fabrication of the tester. The design package included: System Layout Diagram, I/O list, Schematic Diagrams, Screen Layout, Sequence of Operation, and Sample Reports (test spec results). Additional details such as data storage formats, metering accuracies, and special calculations were covered as well. Once approved by the customer the tester was fabricated, tested, and installed at the customer site.

Customer Benefit:

The customer was able to test their devices, using the Emerging Technologies, LLC. custom designed test system, to verify correct operation of their product. Since the system is configurable, specification changes can be made on the plant floor. Being mobile, the system can be easily located were it is needed. A manual mode provides a platform for product troubleshooting and development.

ET Responsibilities:
- Functional Specification Generation
- ✓ Design / Engineering
- ✓ Fabrication
- ✓ Programming – Software
- ✓ Programming – Firmware
- ✓ Field Installation
- ✓ On-Site Commissioning
- ✓ Post Commissioning Support
- Other

Technologies:
- ✓ Embedded Computers
- ✓ Microcontrollers
- ✓ Visual Software
- ✓ Control Software
- ✓ Data Acquisition
- Computer Based Control
- ✓ Communications – RS232
- ✓ System Integration
- ✓ Other – custom interface PCB's

Special Features:
- ✓ PicMicro based embedded controller (no PC required).
- ✓ Removable SD card configuration and results storage.
- ✓ Quick connect for UUT, Power Supply, & Load.
- ✓ Manual mode for troubleshooting product.
- ✓ Mobile 19" Rack enclosure w/Front and rear access.

(920) 793-2782