Emerging Technologies

PORTABLE CALIBRATION, PROGRAMMING & TEST SYSTEM

Brief Description:
Emerging Technologies, LLC. was called upon to design and build a custom Calibration, Programming, and Test System for a PIC16F72 based product.
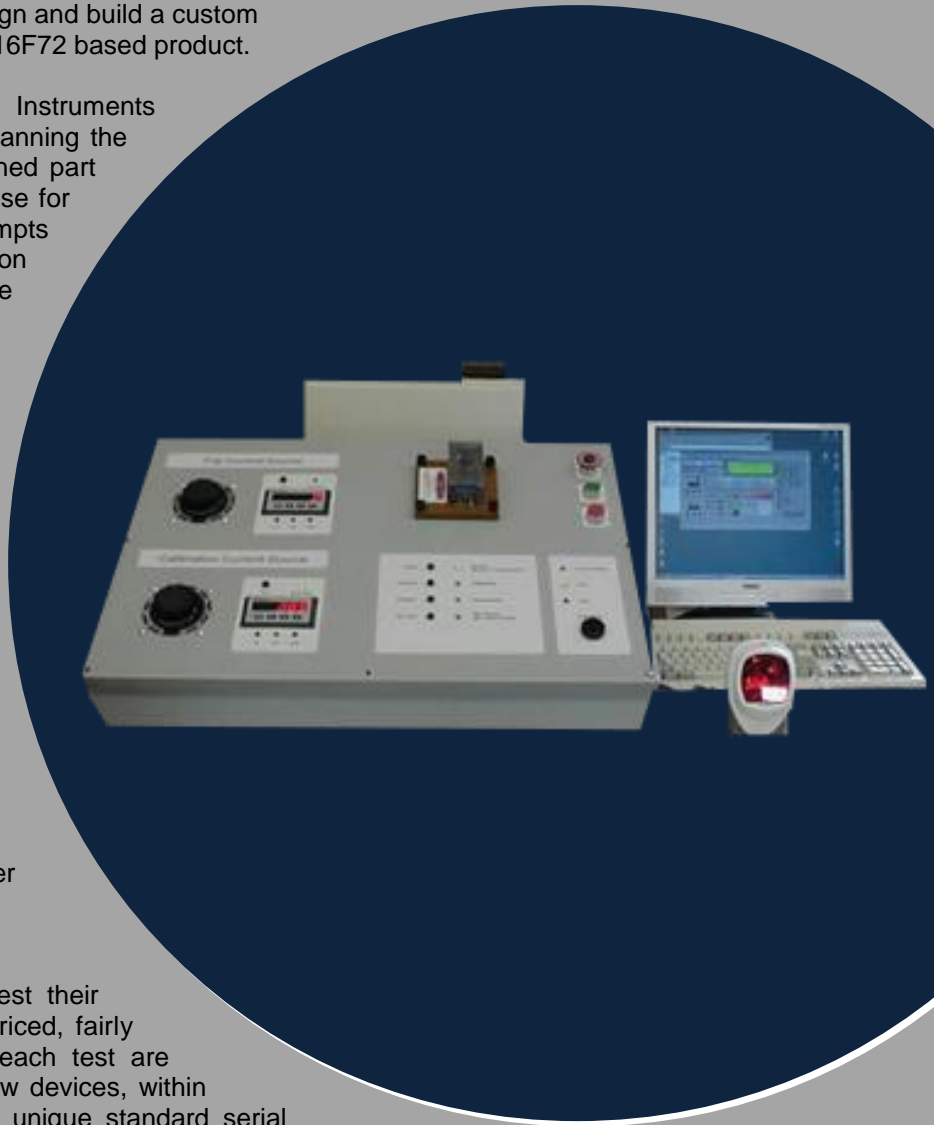
The control program was written using National Instruments LabView 6.1. The operator starts the process by scanning the bar code on the customer part. Based on the scanned part number the system queries a user modifiable database for the required system settings. The system then prompts the operator to perform set up and calibration operations to the DUT (Device Under Test). Once the calibration is complete the system generates a modified DeviceNet style unique serial number, in circuit serial programs (ICSP) the on board microcontroller, then performs a test sequence. The results of the operations are appended to a CSV (comma separated value) file.

The system provides on cabinet information, test status, and flow to the operator. The operator is required to press the sequence buttons on the cabinet to continue to the next step after operator actions are performed. Additional information is available via the computer screen under warning and fault conditions.

This system is an excellent compromise of automation versus cost. The system allows the operator to perform operations that are verified by the control program. Accuracies are maintained with lower overall system cost

Customer Benefit:
The customer is able to calibrate, program, and test their microcontroller-based product using a, reasonably priced, fairly automated, portable test system. The results of each test are recorded for future reference. The user can add new devices, within the capabilities of the system, to the database. A unique standard serial number is programmed to each device for future tracking in the field.

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

Technologies:
- Embedded Computers
- ✓ Microcontrollers
- ✓ Visual Software
- ✓ Control Software
- ✓ Data Acquisition
- ✓ Computer Based Control
- ✓ Communications – RS232, RS-485
- ✓ System Integration
- ✓ Other – Fixture Design & fab
- ✓ Other – Graphic Overlay Design

Customer Category:
- ✓ OEM
- Custom Equipment
- Utility
- R&D