

APPLICATION BRIEF

2020

PORTABLE FIELD MODULE TEST SYSTEM

Brief Description:

Emerging Technologies, LLC was called upon to design and build two identical custom field module test systems based upon the customer's existing in house test system. The new test systems are to be used by the UUT manufacturer to 100% verify complete sub-assemblies prior to shipment.

The systems required re-layout of the custom emulation PCB (printed circuit board) to accommodate modern components and design techniques. This PCB is the heart of the test system and emulates the UUT (Unit Under Test) mating hardware.

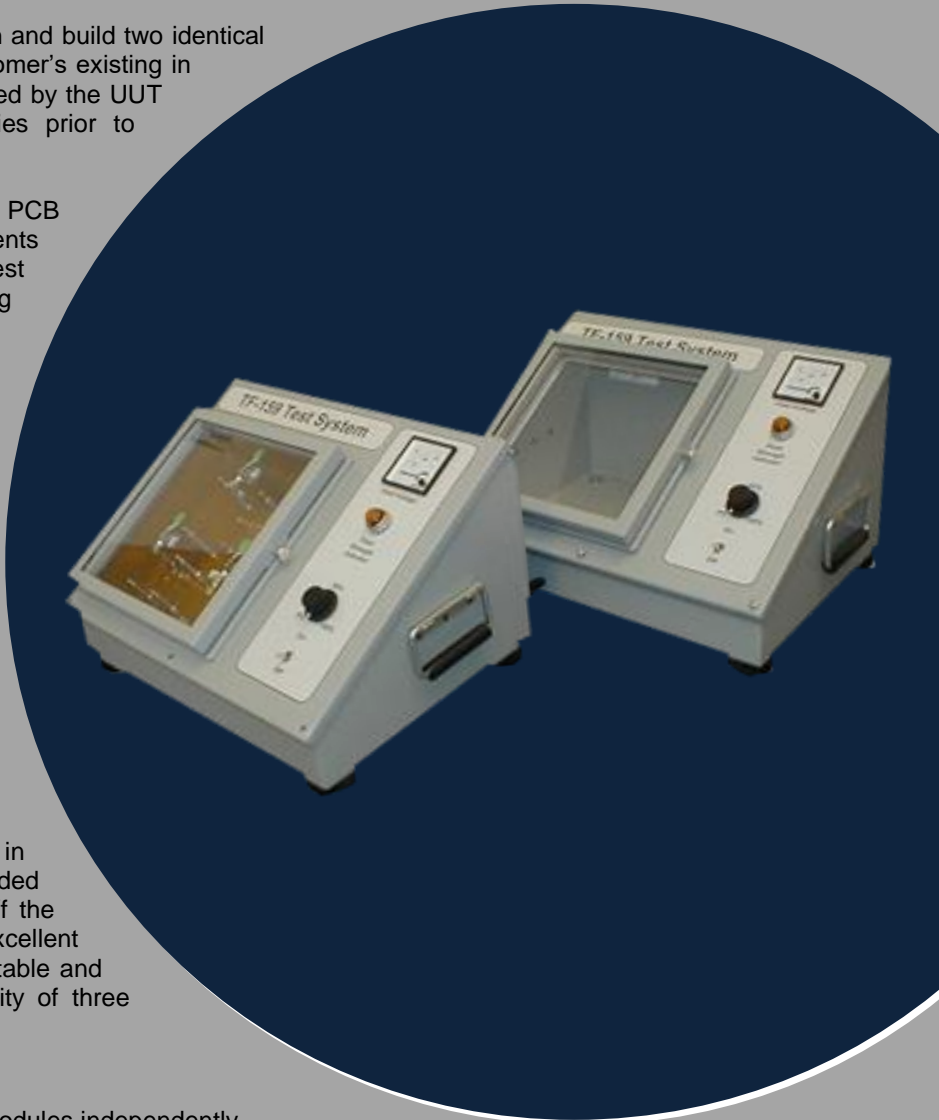
The fixture is designed for quick connection of three different footprints of UUT. Each UUT is easily placed, via four guide pins, against a set of replaceable spring probes, with a simple toggle clamp. The guide pins ensure accurate placement of the UUT while the toggle clamp secures the unit in place for testing.

To protect the operator from potentially dangerous voltages, the test systems utilize an interlocking door, which removes power from the spring probes when the door is open. For further safety, protection is provided via a 220VAC two-pole circuit breaker. Additional in-rush current protection has been designed into the system as well.

The unique challenge of building these test systems lies in the integration of the custom fixture, customer provided components, custom developed PCB, and standard off the shelf components. These systems are an excellent compromise of functionality versus cost. They are portable and durable, and allow the operator to test the functionality of three different field modules at a reasonable cost.

Customer Benefit:

The customer is able to test any of three different field modules independently using a single low cost, durable, test system that is able to operate on international power. By having two identical systems built at once, the customer was able to take advantage of even more savings.



ET Responsibilities:

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

Technologies:

- Embedded Computers
- Microcontrollers
- Visual Software
- Control Software
- Data Acquisition
- Computer Based Control
- ✓ System Integration
- ✓ Other – Fixture Design & Fab
- ✓ Other – Enclosure machining
- ✓ Other – Graphic Overlay Design

Special Features:

The customer required these test systems to operate on international power systems. These systems were designed to operate on 220VAC 50/60Hz power.