

# APPLICATION BRIEF

## 2020

## OVERLOAD RELAY END OF LINE TEST SYSTEM

### Brief Description:

Emerging Technologies, LLC. was called upon to design and build an End Of Line test system with laser marking. The DUT was to be configured, tested, and marked.

Emerging Technologies, LLC. worked from a customer provided test specification and sample product. Challenges included automated hipot testing, accurate three phase current sourcing and measurement across a range of 0.25 to 500 amps AC, modular fixturing for 20+ different models of DUT, and laser marking after test completion.

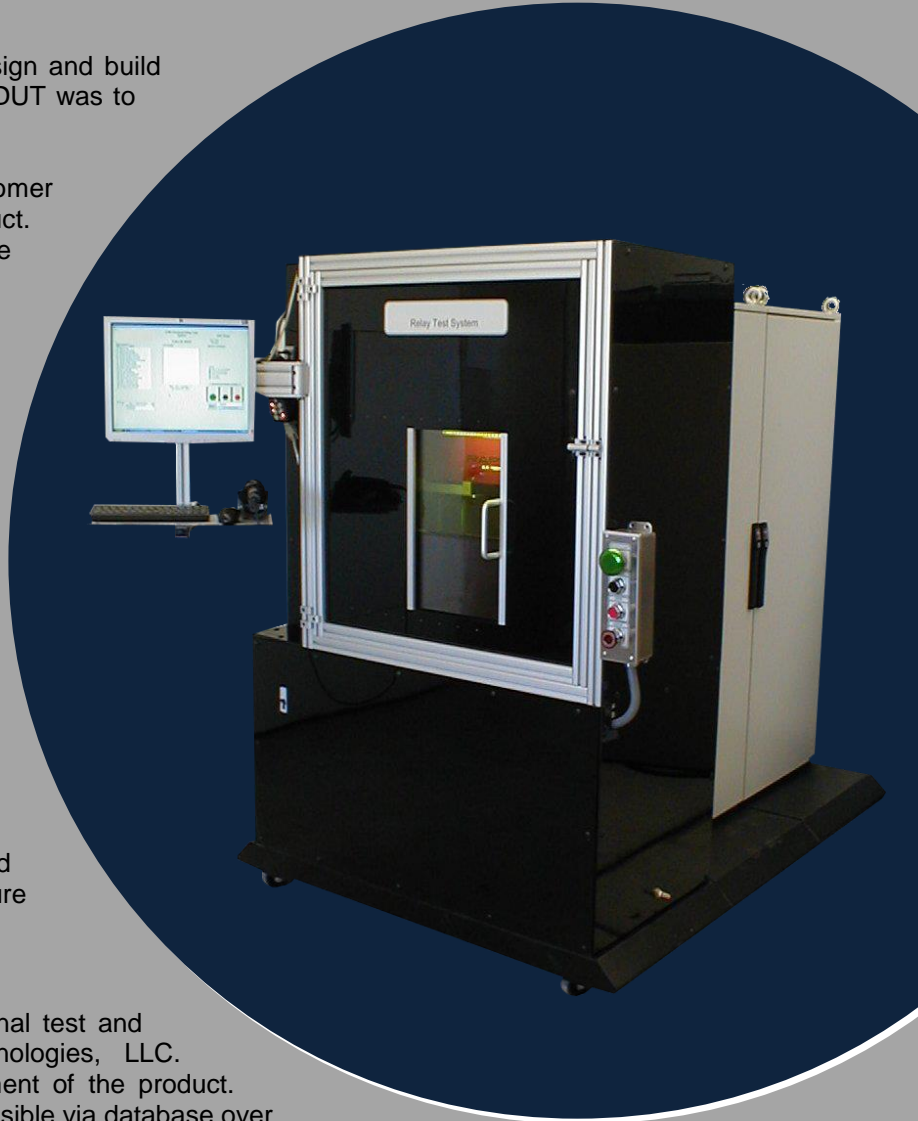
The product to be tested consisted of many variations in range and physical configuration. Significant planning for test application development as well as automated fixture verification & clamping, and correct laser marking was required.

3D solid modeling was utilized to ensure correct fit of customer provided DUT models prior to manufacture of fixturing.

The project cycle consisted of preliminary engineering, system design, application programming, system fabrication, and system operational verification. Frequent communication and joint effort with the customer were employed to ensure the success of this test system.

### Customer Benefit:

The customer is able to hipot test, configure, functional test and mark final-assemblies, using the Emerging Technologies, LLC. developed test system prior to packaging and shipment of the product. Additionally, the results of testing each product is accessible via database over the plant network.



### ET Responsibilities:

- Functional Specification Generation
- ✓ Design / Engineering
- ✓ Fabrication
- ✓ Programming – Software
- Programming – Firmware
- Circuit & PCB Design
- On-Site Commissioning
- ✓ Post Commissioning Support
- Other

### Technologies:

- Embedded Computers
- ✓ Microcontrollers
- Visual Software
- ✓ Control Software
- ✓ Data Acquisition
- ✓ Computer Based Control
- ✓ Communications – Modbus via RS485, GPIB
- ✓ System Integration
- ✓ Other – Auto-clamping fixture
- ✓ CAD - 3 D Modeling

### Special Features:

- ✓ 500 Amp 3 Phase AC Current Source.
- ✓ Automated in-fixture Hipot Test.
- ✓ Automated Laser Marking System.
- ✓ Modular Automatic Pneumatic Clamping DUT Fixture.
- ✓ DUT Configuration VIA Modbus.
- ✓ Network Database Results Storage.