



PYTHON SOFTWARE DEVELOPMENT FOR ANALYSIS AND TEST

Brief Description:

Emerging Technologies, LLC was called upon to re-deploy a custom test analysis program for high speed data acquisition using Python.

The existing system was developed using an early version of Basic and ran on an earlier version of high speed data acquisition hardware. The existing functionality was to be duplicated and additional enhancements were to be added. The new software runs on a modern high speed DAQ platform.

Multiple wave forms are processed after capture to verify specific characteristics are present and anomalies are not present in the captured wave forms. Special math was required to identify the characteristics for test. Multiple channels of data were integrated and analyzed. A key improvement was simultaneous analysis of six related waveforms acquired during a common time period (the original system analyzed one waveform at a time).

This system includes improvements over the software previously in use by the customer. The new program functions as a support program to the existing analysis program and performs pass/fail functions on the captured high speed waveforms.

Customer Benefit:

The customer is able to perform product testing and automated waveform analysis using a cleanly integrated software sub-program developed in Python specifically for use with the Synergy platform. Six times the original productivity is realized per test station.

Why Python:

- Python is powerful and fast.
- Python plays well with others.
- Python runs everywhere.
- Python is friendly & easy to learn.
- Python is Open.

Example similar image (not actual program)



Key Components Used:

- Hi-Techniques Synergy Mainframe.
- Hi-Techniques Synergy Software
- Python Software.

Emerging Technologies, LLC.

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
- System Integration
- ✓ Other – Waveform analysis

Customer Category:

- ✓ OEM
- Custom Equipment
- Utility
- R&D

SPECIALISTS IN TEST, MEASUREMENT, AND DATA ACQUISITION

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