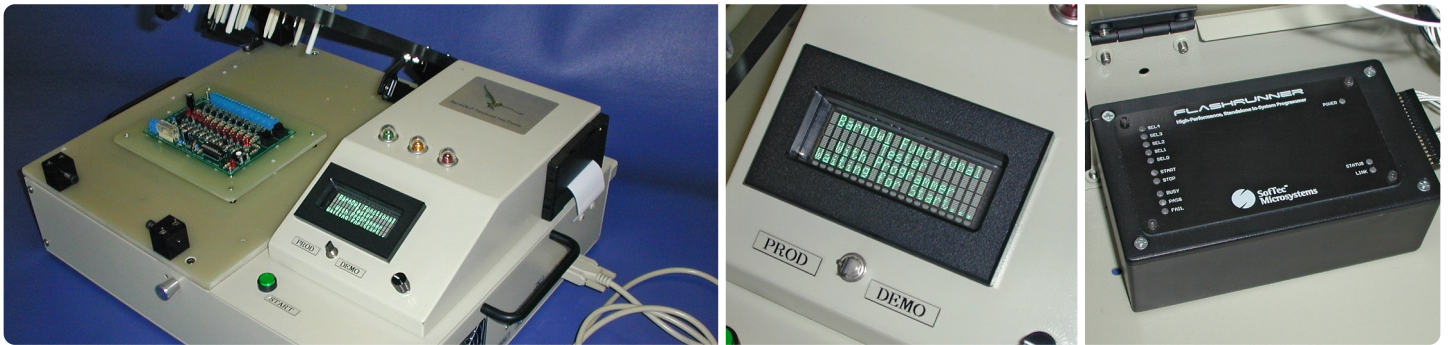Case Study: Intrinsic Quality (ICT and Functional Test Solutions)

Intrinsic Quality Integrates FlashRunner to Test Fixture

Mr. Lawrence Raymond, President of Intrinsic Quality, explains why his company chose FlashRunner.

> "We investigated several alternative programmers from several different vendors—none combined the features and value of FlashRunner"

Intrinsic Quality (IQ) has recently announced the release of its BarnOwl functional test fixture. This tester platform is designed to provide an economical, easy to implement test of low-to-moderate complexity MCU-based circuit boards.

The Problem

During production test, the BarnOwl tester often must program microcontrollers' Flash. This requires the integration of a Flash programmer. Selecting and verifying the right programmer for recurring integration became a critical project. There are several features that the programmer must have to be suitable for this integration (see table below).

The Solution

"We investigated several alternative programmers from several different vendors", said Lawrence Raymond, President of Intrinsic

Quality. "None combined the features and value of FlashRunner."

The breadth of coverage offered by FlashRunner is a key consideration. FlashRunner is able to program virtually all the microcomputer devices that BarnOwl will encounter. Having a single set of hardware and software minimizes the learning curve, documentation and follow-on training.

BarnOwl uses serial communications, so the FlashRunner's script-based programming mode is ideal for integration. The ease of hardware integration is also straightforward. A final factor in the selection was that FlashRunner is designed as a production programmer. IQ had seen several programmers designed for a lab environment fail to stand up on the factory floor.

A Case Study

One of the BarnOwl test develop-

ment projects was to test a microcomputer-controlled 10-channel driver board. This board required BarnOwl to strobe digital I/O, and measure frequency, analog voltages and currents. The driver board is based on a Microchip PIC16F84A microcontroller, which requires flashing as part of the test. To complete this programming requirement IQ integrated a FlashRunner unit into BarnOwl.

The integration project was a breeze. BarnOwl already used a bed of nails fixture for functional test, so connecting FlashRunner to the ISP port only required the addition of four new nails.

Controlling FlashRunner with BarnOwl was also simple. FlashRunner can store up to 32 program files. These are selectable via a 5-pin control port, which we connected to a digital port on BarnOwl. In a similar manner we con-

nected FlashRunner's signals START, PASS and FAIL to digital I/Os.

Conclusion

FlashRunner provides a powerful addition to BarnOwl. The ability to program a wide variety of microcontrollers with a single consistent interface makes the FlashRunner an easy selection. Integrating this programmer into BarnOwl was straightforward with no unpleasant surprises.
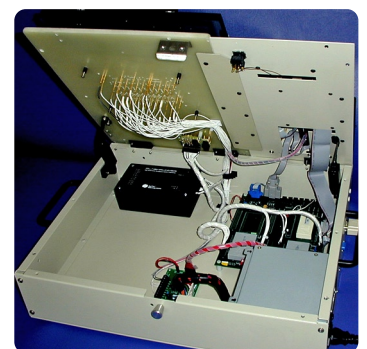
Feature	Benefit
Programming a variety of MCUs	No need to learn new set-ups and procedures
Operation independent of PC	No requirement to have PC, cabling, PC software at test station
Holding of multiple programs	Same test stations may need to flash several versions of code
Easily interfaced to controller	Reduced cost of implementation
Easy to update target firmware	Code changes are routinely handled
Durable, robust	Able to withstand rigors of production floor

About Intrinsic Quality

Intrinsic Quality (www.intrinsicquality.com) is a full service test engineering company providing functional and In-Circuit services and products to Electronics manufacturers.

Using the latest industry leading software packages, developing in house software tools, in addition to having its own in-house ATE systems ensures Intrinsic Quality is always delivering innovative and unequaled quality products.