



Q'n Apps #S14

Q: Can I use Symphony for high volume production testing?

There is a striking resemblance between tester applications employing people for the handling of devices and applications that utilize robots. In either case, the robot or the person places a device in the socket, signals to the tester when ready, and puts the part in an appropriate tray or bin upon completion of the test depending on its outcome. Hence, the functional requirement for high-speed testing is virtually identical to low-speed test requirements. Only the time element is a major difference. Hence, Q'nApp #S12 applies directly to High Volume testing as well, only without sufficient throughput.

An obvious prerequisite to high-speed testing, then, is high throughput, i.e. the number of devices tested per minute. To achieve high throughput, multiple DC PMUs is a prerequisite. So is deep vector memory.

The ETS800 series provides PMUs on each pin card. At no time need we operate more than 32 PMU tests in sequence; indeed, judicious selection of pins can significantly reduce the number of test sequences.

Indeed, 100 signal pins, which require 100 PMU test sequences with a single DC PMU, may require only 4 PMU sequences when using the Titan or Griffin. Effectively, the PMU tests become nearly 20 times faster! However, there is a diminishing return to adding PMUs while the cost is proportional to the number of PMUs.

The ETS800 series testers have vector memory depth ranging from 4M to 64M. For production testing, deep vector memory is often necessary.

Accuracy cannot be dispensed with despite the need for high throughput, lest yield will be reduced. Hence, the HiLevel PMUs are high precision instruments that only a combination of mechanical relays, high precision resistors (0.05% accuracy), instrumentation op amps, and high resolution DACs (12 bits) can produce.

All in all, the ETS800 family with multiple PMU is superbly suited to high volume production testing.

Related info

Q'nApp #S3: The HiLevel Production Floor
Q'nApp #S11 and #S12: The HiLevel TestBox
Q'nApp #S18: Prober Fixtures
Q'nApp #S37: MultiSite
Q'nApp #S51: Fast Continuity
The HiLevel ACT Manual