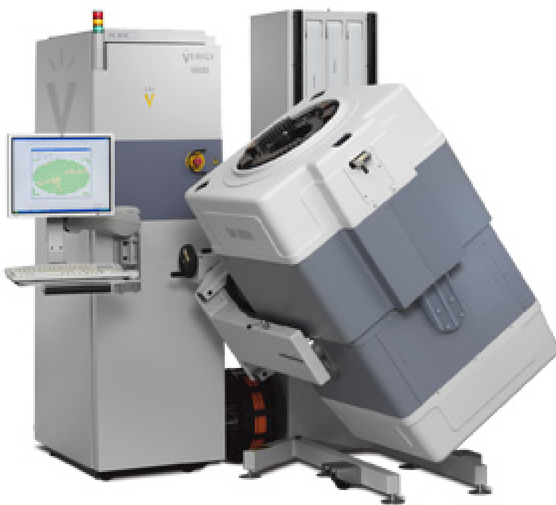
V6000 WS

Product Overview



Verigy's V6000 WS is the industry's first wafer sort test solution for Flash and DRAM applications with Active Matrix technology, delivering versatility, scalability, and breakthrough cost-of-test – at the lower price of a Flash tester.

Industry Challenges

Today's consumer electronic products demand ever more robust memory capabilities. Moore's Law drives increasing device density and price pressure, so while density tends to drive test costs up, manufacturers continually require lower cost-of test (COT).

One way to address the COT is through increased parallelism, but until now, that increase has meant a significant trade-off in performance. To remain competitive, today's manufacturers require testing solutions that offer greater parallelism and better performance.

In addition, manufacturers want the ability to shift production volume between Flash and DRAM while maintaining maximum throughput to meet market conditions.

All this must be affordable.

V6000 WS Memory Test System

The V6000 WS memory test system with new patent-pending Active Matrix technology delivers versatility, scalability and breakthrough cost-of-test (COT) that manufacturers need for both Flash and DRAM testing. The V6000 WS delivers the lowest COT in the industry through:

- Highest parallelism
- 300mm one touch-down DRAM, NOR and NAND test
- Scalability in AC performance – 140, 280, 560 Mbps – and parallelism (up to 18K I/O pins + 4K PPS (programmable power supply))
- Active Matrix improve yield with no compromise to signal integrity

The revolutionary Active Matrix both improves yield and reduces cost per pin by 50 percent compared to a traditional tester, by providing a driver and comparator for each pin, and maintaining signal integrity and isolation. It enables 300 mm one-touchdown probing on most devices.

With the simple installation of a new probecard, the V6000 WS can test either DRAM or Flash memory, allowing manufacturers to shift production volumes quickly and easily to meet market conditions and maximize profits.

The V6000 WS also uses low-cost, connectorless probe cards, and also has the ability to use different size probe cards (450mm or 560mm) depending on parallelism required.

The V6000 WS interfaces to all major probers.

The V6000 ulilizes the same operating system software, hardware and interface as the V6000e and V6000 FT, making test programs portable from engineering and characterization to wafer sort and final test.

The V6000 is water-cooled, requiring a smaller footprint than air-cooled systems.

The V6000 platform's scalability and versatility will allow manufacturers to extend the useful life of the tester through a series of upgrades, well into the future.

Revolutionary Active Matrix

With the V6000 test solutions, Verigy introduces Active Matrix, the innovative patent-pending technology that enables increased throughput through increased parallelism, and increased yield through significantly improved signal fidelity.

Four times the number of pins = four times the parallelism at half the cost per pin

- Pin electronics are moved to the interface layer, located in a cost-optimized pin electronics ASIC to achieve up to 18K pins per system
- Custom ASICs with drivers and comparators, produce four times the parallelism of traditional test solutions, at significantly lower costs (50 percent less per pin)
- Matches or exceeds the parallelism of other testers, without the signal degradation caused by sharing pins or the yield loss caused by shorted pins on a shared channel

75 percent reduction in distance between the pin electronics and probe card significantly improves signal fidelity and yield

- Active Matrix ASIC enables close proximity to the probe card to provide optimal signal performance and parallel reads
- Reduced capacitive load-to-drive helps to eliminate excessive guard banding caused by long tester transmission lines that don't match real-world device environments

Features and Benefits

Feature	Benefit
Active Matrix	Breakthrough parallelism and COT, with up to 18K pins Active Matrix maintains high yields, by maintaining signal integrity and isolation
Performance options: 70 MHz / 140 Mbps 140 MHz / 280 Mbps 280 MHz / 560 Mbps	Flexibility and scalability in performance to meet future test requirements
300 mm 1 touchdown probing	Lower COT, higher throughput
6th generation Tester-Per-Site® architecture	Delivers better throughput for a range of memory devices (Flash and DRAM) by providing independent APGs per site. Expandable configurations for increased parallelism
Hardware and software compatibility throughout the V6000 platform	All test programs can be leveraged from the V6000e engineering work station to the WS and FT platforms
RA hardware assist	The ability to run Redundancy Analysis including scan in the background. Scalable RA processing capability.
Multiple probe card sizes	Can use a 450 or a 560 mm probe card as needed, depending on how the tester is configured
Prober compatibility	Docks to all major probers

Components and Options

- V6000 WS tester (system bay and test head)
- Wafer sort interface
- ECR (Error Capture RAM) memory size options
- 1-32 test site modules (576 pins each)
- DRAM Background Redundancy Analyzer
- Performance options up to 280 MHz / 560 Mbps

Key Specifications

Specification	Value
Test sites	128 max (32 TSMs max)
Tester resources	18,432 I/0 pins, 2,048 DCV max
Power supply outputs	4096 Max
Test frequency / Data Rate	280 MHz / 560 Mbps (+/- 300 ps OTA) 140 MHz / 280 Mbps (+/- 400 ps OTA) 70 MHz / 140 Mbps (+/- 1 ns OTA)
ECR	Up to 64 Gigabits per Test Site Module
Applications	NAND, NOR, MCPs, DRAM, SRAM

Related Information

For more information about the V6000 WS, please visit the following website:

www.verigy.com/go/V6000

Contact Information

For more information about the V6000 WS, please contact your local Verigy sales representative

www.verigy.com/go/contactus

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