

Global Semiconductor Alliance



*SURVIVING UNDER CURRENT MARKET CONDITIONS*

*RISK MANAGEMENT IN THE SEMICONDUCTOR SUPPLY CHAIN*

*FAKING IT: WHY COUNTERFEITING IS THE SYMPTOM, NOT THE DISEASE*

*ACCELERATING TECHNOLOGY EVOLUTION THROUGH PROCESS OUTSOURCING*

*SEMICONDUCTOR EQUIPMENT SERVICE SUPPLY CHAIN—ANTICIPATING THE UPTURN*



*Supply Chain Innovation:  
Responding to Dynamic Challenges*

# Back-**END**

**AccelerATE Solutions** is a multi-platform test engineering service provider located in San Jose, California. The company's mission is to leverage its extensive experience and contacts within the semiconductor test arena to expedite its customers' time-to-market. AccelerATE provides the following services to reduce production costs: test pattern conversion, test interface development, test program development, device characterization, failure analysis (if required), test program optimization, sample production, deployment to volume manufacturing, and test program conversion.

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**Advantest's** new T5385 memory test system for dynamic random access memory (DRAM) wafer test delivers an unrivalled 768-device under test (DUT) parallel test capacity and 533Mbps capability for increased throughput and lowered cost of test. Ideal for high-volume wafer fabs, the new tester is also equipped with a flexible pin configuration that supports diverse DRAM devices, allowing tester pin resources to be optimally allocated for efficiency, reduced touch-downs and improved throughput. Achieving improved efficiency per device while scaling even higher in parallelism, the T5385 also delivers known good die (KGD) for consumer devices to greatly improve yields for low-power double data rate two (LPDDR2) and DDR3 multi-die and stacked devices. Enabled by hardware and software advances, the T5385 offers a high-speed memory repair analysis (MRA) system for DRAM and Flash memory wafer test that greatly reduces test time.

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Frost & Sullivan is presenting **Amkor** with the 2009 Global Advanced Electronic Packaging Technology Innovation of the Year Award at their Growth, Innovation and Leadership conference in Scottsdale, Arizona. The award is based on Frost & Sullivan's analysis of the advanced electronic packaging market, where Amkor's innovative, new products, such as through-mold via package-on-package (TMV™ PoP), FusionQuad® and flip-chip molded ball grid array (FCMBGA), were recognized for technical innovation and electronic packaging leadership. Each year, Frost & Sullivan presents awards to the company (or individual) that has carried out new research which results in innovation that has or is expected to bring significant contributions to the industry in terms of adoption, change and competitive posture.

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**BroadPak**, a premier provider of semiconductor package substrate design and signal integrity services, introduced a revolutionary design methodology for packaging the emerging 40nm node. With its core expertise in advanced, high-performance substrate design and test, BroadPak is the only independent substrate design center dedicated to silicon-package co-design methodology for demanding applications where cost reduction and increase in performance matters. Through unique miniaturization techniques, BroadPak provides an unprecedented level of miniaturization for system-in-package (SiP) used in very low-profile (VLP) applications.

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In response to customer demand for independent, flexible IC development and supply engineering services, **DA-Test** expanded its offering to include IC design, strategic production test, product engineering and supply management. The expanded offering also includes a new name and a head office, doubling the size of the automatic test equipment (ATE) lab and allowing room for future growth.

DA-Integrated is the semiconductor industry's first and leading provider of comprehensive IC development services, helping customers optimize time-to-market, development cost, cost of goods sold and product quality. Their highly experienced team has provided solutions for a broad range of applications and device characteristics. DA-Integrated focuses on customer requirements and offers flexibility in technical scope and commercial terms.

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**Evans Analytical Group's (EAG)** release-to-production (RTP) team provides engineering service and support from early chip design to volume production in the areas of test program development and product engineering; test time rental on all major ATE platforms; reliability and environmental qualification; electrostatic discharge (ESD) and latch-up testing; printed circuit board (PCB) layout and hardware design; failure

analysis; focused ion beam (FIB) circuit edit and debug; electron microscopy; and equipment calibration and repair services. EAG also has over 30 years of experience in bulk materials characterization and surface analysis.

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**ISE Labs** is dedicated to the growth of failure analysis capabilities to meet the needs of customers. The company's failure analysis lab has recently brought in a new team led by Dr. Dan Sullivan, formerly of Phillips and LSI. As well, ISE Labs upgraded most of its equipment, including the installation of a new Hitachi S-4800 scanning electron microscope.

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**MASER Engineering** offers fabless IC manufacturers and integrated device manufacturers' (IDM) design groups first silicon circuit edit using the latest FIB systems. This service is now available with the most advanced system for single-die consumer electronic (CE) work, DCG Systems' OptiFIB-IV. This latest generation of CE FIB systems is capable of front and backside modification. It has a unique coaxial FIB/near infrared (NIR) optics column and a Graphic Data System II (GDSII) data-controlled piezo table for backside navigation to features in the first metal layers of 40nm technology devices. Advanced endpoint techniques as well as accurate copper metal layer removal and deposition of low-ohmic molybdenum and platinum conductors and silicon oxide isolation layers give design groups the possibility to avoid multiple re-spins and the increasing costs for sub-100nm masks. Time-to-market for new, advanced ICs can be shortened when using this new facility.

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**Mfg Vision** specializes in low-cost, straightforward yield management and data analysis for large and small companies.

The company's FloorVision product helps customers achieve higher yields and more efficient manufacturing using a very attractive Web-based tool. What distinguishes FloorVision is its ease-of-use, speed and collaborative attributes, taking advantage of Web 2.0. Fabless companies can also now provide a revolutionary third-party FloorVision license to their foundries to help resolve fab-related issues more quickly. Round-the-clock support and regular seamless upgrades are part of the package when companies purchase licenses for FloorVision.

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**MVTS Technologies'** business model includes partnering with original equipment manufacturers (OEMs) of ATE to provide a transition plan for the support and availability of legacy and discontinued equipment. While each OEM relationship is different, all provide ATE users with a resource for capacity expansion and support for maturing ATE.

Specifically, MVTS provides services such as parts repair, labor and field service, tester maintenance agreement support, tester rental, application services and regional facilities to make newer generation testers available for engineering and product development. MVTS also purchases idle or surplus equipment for inventory to support resale of these out-of-production equipment and parts. Utilizing the extensive internal inventory expertise, MVTS offers users of this equipment a turn-key OEM-like buying experience. The equipment is configured to match the needed requirement, packaged with warranty, training, applications, installation and an extended service contract.

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**RoodMicrotec** is the first independent test house in Europe with fully automated monitored burn-in service. By investing in a fully automatic loading/unloading system, RoodMicrotec is now able to execute the burn-in process automatically. This increases quality and shortens processing time, and no manual steps are necessary which optimizes process safety. The process can now handle high-volume

burn-in as well as safe launch activities. The automatic system has a throughput of up to 5,000 devices per hour, which is 10x faster than manual operation. The reduction in processing time leads to a significant reduction in total cost. Amid the current market situation, this is essential and results in a clear competitive advantage for the customer.

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Using an industry-standard cost of ownership model, **Scanimetrics** has saved 54 percent of semiconductor test costs. Scanimetrics' Wireless Test Access Port (WiTAP™) test technology can test many times and at any time during the fabrication process, making it ideal for wafer-level and SiP testing. On top of the 54 percent test savings, Scanimetrics has shown that using WiTAP™ also increases product revenue by improving yield, saving on discarded product, reducing chip size, steepening yield ramps and increasing time-to-market.

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**STATS ChipPAC** has introduced a new flip-chip technology that offers significant cost savings over standard flip-chip packages, with price points well below wire bond packages. STATS ChipPAC's low-cost flip-chip technology features an innovative, routing-efficient interconnection structure and a simplified substrate technology design coupled with improvements in assembly technology such as a cost-effective mold underfill process. The low-cost flip-chip technology also features a true lead-free bump composition which has proven to be effective with the mold underfill process. The first phase of low-cost flip-chip technology was qualified in 2008 and is in high-volume production today.

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