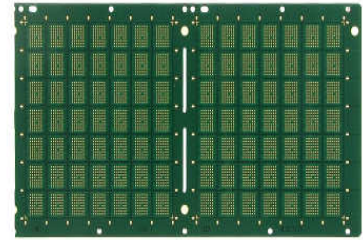


**ACCESS**

**Coreless Substrates**

Excellent for SiP, Lowest in Cost  
 Odd or Even layers: 3, 4, 5, 6, 7 and up  
 Via Post Approach, Any Via Shape, Reduced \$/Via  
 Diameter for all layers: > 75µm  
 Line/Space: > 20µm  
 Minimum Dielectric Layer: 30µm  
 Sputtered Copper Seed Layer  
 Solid Copper Vias, All Layers Planarized  
 5Ghz Ready



**APPLIED**  
**M S T**

**Molecular Deposition Systems**

**MVD100 System** provides semi-automated deposition of organic and composite surface coatings. This system can reduce coating costs by an order of magnitude when compared with traditional techniques.

**benefits:**

Low temperature process, Low defect density, Precise vapor delivery  
 In-situ surface preparation, In-situ adhesion layers, Excellent repeatability, Safe operation, User-friendly interface

**MVD150 System** provides manufacturing capacity and complete automation.

**Benefits:**

Volume production, Advanced precursor management, Integrated surface treatment, Automated processing sequence, Factory Automation SECS/GEM, Robotic Interface



**Camtek**

**Automated Inspection**

**FALCON Series** designed for automated optical inspection on wafers, MEMs, and other application for Bump, Post Dice, Probe Mark Inspection Defect, MEM's Inspection, Cover Glass, Deposition, CMP, Photo, Etch, Wafer Edge and Macro Inspection

**PEGUSUS Series** provides Automated Final Inspection (AFI) for High-Density Interconnect Substrates (HDI-S) such as PBGA & CSP strips and other gold plated applications.

**ORION Series** designed for main-stream Large Area Masks (LAM) inspection. It offers unparalleled detection ability on LAM with down to 25 µm line/space width technology.

**Dragon Series** HDII is designed to meet PCB hi-end and mass production AOI requirements, starting at 30 Microns line-space PCB technology. The Dragon HDII is equipped with state-of-the-art, tailor-made optics ensuring optimized image acquisition combined with new firmware that enables an accurate detection of critical defects in minimum time.





# Semiconductor

## Automated Back-End Test Equipment

Wide range of back-end manufacturing systems. Winner VLSI #5 Best WW supplier in 2005 and #2 Best WW suppliers in 2006. Saw Singulation systems

- CPS Punch systems
- PBGA Singulation systems
- Auto Mold systems
- Pick & Place systems
- Wafer Level Packaging Pick & Place
- Wafer Level Ball Mounting systems
- CAM Press for Trim, Form, Singulation
- Coverlay Tape Attach & Detach systems
- Test Handlers, Strip Test Handlers
- Deflash, Marking, Trim systems
- AutoMold, Trim systems
- Trim, Form, Laser systems
- Spot Welding systems
- Junction Coating In-Line systems
- CSP Punch Singulation systems
- Laser Marking In-Line systems
- Laser Marking systems
- Vision systems
- Lead Frame Molds



The Tapeless Sawing of QFN 2x2 (2,040 units/strip)



## Probe Cards

High Quality Epoxy Ring, Logix 2x2, J-Probe System, Vertical Contact, Vertical Spring, Ultra-Low Leakage. In addition, we support special applications and custom board designs.



## Test Contactors

For packages and memory modules such as SO, QFP, QFN, DFN, DDR2 and DDR3 for production testing and device characterization. Superior electrical & mechanical performance. RoHS-compliant lead-free package support. Providing increased performance results and Lower Cost of Test.



phoenix|x-ray

## X-ray Systems

Automated 2D X-Ray and 3D Computed Tomography inspection of BGA, CSP, QFP, QFN, Voiding Calculation, Wire Sweep, Printed Circuit Boards, Military, Space, Geology, Medical, and more.





### Nano Metals

Advanced Nano Materials for a wide array of clean-energy, defense, electronics and other high-value applications, such as batteries, fuel cells, and hydrogen generation specific to Nano Material applications...

[Electronics, Batteries, H2O Filtration, Hydrogen Generation, Solar Cells, Fuel Cells](#)



### Automated Test Handlers

High Speed Gravity Feed Test Handlers  
Tape & Reel options and Strip Test Handlers.  
-60c ~ +160c  
Quad Site  
Octal Site

Innovative gravity feed, fully automated test handler systems used in final test operations at our renowned semiconductor manufacturers in Europe, Asia and USA.



### Automated Wafer Sorters, Die Bonders

SiP Bonder, SiP Moulder  
High Sensitivity Gas Analyser  
High Speed, Precise Die Bonders flexible to support SiP (System in Package) assembly with 300mm wafer handling capability.

Patented "Wafer Pick" design for high-speed, thin wafers down to 50 microns without breakage.

Wafer Sorters for 300mm wafer applicable to clean carrier, wafer-by-wafer control, and full automatic carrier system.



### Photon Emission Microscopy

Front-side & backside wafer and package level failure analysis. Auto-navigation features, various sensitivity cameras, and backside probing & preparation equipment.

### Scanning Optical Microscopy (LSM)

PEM, OBIC, SCOBIC, TIVA, LIVA, OBRICH SEI and other advanced failure analysis test methods.

### SEM, TEM, Augers & FIB Optical Digital Imaging

### Cathodoluminescence Systems



**Probe Stations:** Manual and Semiautomatic Micro Probe Stations for DC, RF / Microwave, Optical, Low Current, and Failure Analysis micro probing. Micro Positioners, Probes, Probe tips, Hot & Cold chucks, Thermal chucks, Resistivity Four Point Probe, Dark Boxes and other and accessories.

**Lasers:** New Wave Single & Multi-Wave Length such as UV, Green, and Infra Red.

**Zoom Microscopes and Accessories:** Optem Analytical Probing Microscopes, Video Microscopes and Optical Zooms offering single objective magnification ranges of up to 30,000x.

**Vibration-Isolation Tables:** Kinetics Vibration-Free Isolation Tables for microscopes, probe stations, laser cutters, and optical systems. Honeycomb Optical Tables and Custom Vibration Products also available.



**SUMICARRIER**  
Tape & Reel

**Carrier and Cover Tape**

Compatible with PVC, PET, PC, and PS carrier tape. Ultra-Wide operation window of 160c - 200c. Excellent transparency. Available up to 500mm in length.

Carrier Tape for QFP, BGA, SOIC, CSP, Bare Die, Flip Chip, Cell Phones and virtually any carrier application. ESD protection. Extra-Strength Design. Patented Anti-Nesting and Fenced eliminate pocket and package lead damage. Universal BGA ball layout design. Shallow pocket design supports 2000 devices per 13" reel (4" hub). Anti-static shipping reels. ISO 9002, ISO 9001, ISO 14001, QS 9000 certified.



**SUMITOMO**

**Etched & Stamped Lead Frames, Substrates**

S/PDIP, PLCC, QFP, TQFP, LQFP, SOJ, SOIC, SSOP, TSSOP, TSOP, QFN, BCC, MLF and TAB CSP. Multiple plating options. Multi-Strand Production Capability. Taped BGA Substrates for smaller, lighter & higher performance needs. ISO 9002, ISO 9001, ISO 14001, QS 9000.



**WEB**  
Technology, Inc

**Back-end Test Equipment**

Wide range of handling and other test related equipment for packaged integrated circuits. Product range includes the following:

- 6000 Bubble Detection Systems
- 7000 Vapor Detection Gross Leak Test Systems
- 8000 Gross Leak/Fine Leak Preconditioning Systems
- 9000 Centrifuge Systems
- Centrifuge Inserts
- QT Bench Top Test Handler
- 5800 Turret Test Handler
- 8832 Turret Test Handler
- Series 4800 Burn-In Board Loader/Unloader Systems
- ATS-6000 Component Test System

