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## X-ray Inspection System

The TIGER x-ray system features collision-free inspection and is controlled by an automatic mechanism. The anti-collision feature protects the sample from collision damage during the inspection process. The anti-collision capability eliminates the need for viewing windows. An optical camera image snapshot of the loaded sample tray scene on the graphical user interface serves as a map for positioning the manipulator. The two-dimensional inspection system offers a view into the third dimension via oblique viewing at virtually any angle. The system also offers precision manipulation of the sample with positional accuracy down to 100  $\mu\text{m}$ .

*FEINFOCUS, Stamford, CT*

[www.feinfoocus.com](http://www.feinfoocus.com)



## Dispensing System

The Ultra 2400 dispensing system applies consistent amounts of solder paste, flux, adhesives, epoxies and other fluids—from uniform dots as small as 0.10160 mm (0.004 in.) in diameter to neat, controlled beads. The workstation features a vertical design that conserves benchtop space and a footprint 60% smaller than standard electro-pneumatic dispenser configurations. Standard features include: simultaneous digital display of dispense time, air pressure, vacuum, shot count and dispense mode; dispense time adjustable in 0.0001 second increments for control of deposit size; an internal pressure reservoir that reduces cycle time and improves control; multilingual display; automatic voltage regulation; automatic conversion of all dispensing parameters; and security lockout with tamper-proof password control.

*EFD Inc., East Providence, RI*

[www.efd-inc.com](http://www.efd-inc.com)



## Traceability Software Module

MIMTRACE is a traceability software module to help electronics manufacturers meet new traceability requirements. It traces all details of the placement process, including job, lot, panel, board and placed component, with 24 data levels stored for each component placed. The complete module supports full traceability down to the component wreath (single spool). Every component wreath is labeled with a barcode. Newly-delivered components are processed and receive a barcode label including identification number, number of components, supplier or manufacturer, delivery date, charge number and a comment assigned. This information can be read back when needed.

*MIMOT, Irvine, CA*

[www.mimot.com](http://www.mimot.com)



## Motion Feedback Encoder

The Mercury 1800 (M1800) digital kit encoder provides 50-nanometer resolution from the sensor and measures 8.9 mm tall. The encoder is available in two resolutions: 50 or 100 nanometers, linear, or up to 6.5 million CPR rotary. All electronics are inside the sensor, making it ideal for high-noise industrial applications. The encoder's high resolution minimizes cogging for smooth motion control, while its 1-LSB optical index, which is integrated into the scale, allows system repeatability and ease of setup. With the encoder, a motion system can achieve startup and recovery at full encoder resolution.

*MicroE Systems, Nantick, MA*

[www.microesys.com](http://www.microesys.com)

## Workstation Systems

Series 8000 modular workstation systems can be assembled and reconfigured quickly. Each workstation can be configured in a variety of heights and lengths, providing effective use of vertical space up to 84 in. The workstations are easily converted from single- to double-sided at minimal effort and cost. The Series 9000 cabinet pedestals provide heavy duty storage for tools, equipment or materials. Six standard pedestal configurations are available in three different heights and as mobile units. The pedestals measure 16  $\frac{1}{4}$  x 28  $\frac{1}{2}$  in. Drawer extension is 95%, and each has a weight capacity of 150 lbs (70 kg).

*Arlink, Burlington, ON, Canada*

[www.arlink.com](http://www.arlink.com)

## Lead-Free Wave Solder Alloy

The ALPHA Vaculoy SACX307 lead-free wave solder alloy delivers high yield and fast throughput while meeting the strict lead-free environmental mandates. Its fast wetting speed delivers improved solderability. It provides drainage and minimizes bridging defects. The alloy creates strong, mechanically sound joints with long-term reliability. The solder minimizes dross generation, resulting in low process maintenance and reduced product waste. The process window supports the use of a wide range of flux technologies.

*Cookson Electronics Assembly Materials, Jersey City, NY*

[www.alphametals.com](http://www.alphametals.com)

## Flux-Coated Solder Preforms

Indium's flux-coated solder preforms support the optimization of electronic assembly processes. Advantages over plain solder preforms include improved process time—using the pre-applied, fused flux, the preforms eliminate the need to add flux as an additional process step—and improved accuracy since the process fuses precise amounts of flux onto each solder preform. The system also reduces variability by eliminating process steps and improving the consistency, and accuracy of the flux quantity. Flux coatings are available in no-clean formulations and the solder preforms are produced in a range of sizes and shapes.

*Indium Corp., Binghamton, NY*

[www.indium.com](http://www.indium.com)



## IC Ball Bonder

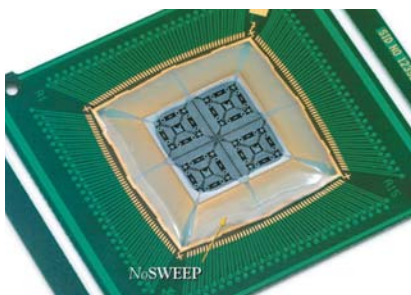
The Maxumplus ultra high speed ball bonder is for all types of ultra-fine pitch applications, including 35 micron in-line pitch. The bonder delivers bond placement accuracy of 2.5  $\mu\text{m}$ . An improved servo control system for the xy table reduces wire cycle times to 63.0 msec. Performance is maintained for a bonding area of 56 x 66 mm (2.20 x 2.60 in.), and precision-touch bondhead technology delivers bond force control. Teaching and calibration software improves overall accuracy to 2.5 $\mu\text{m}$ . The bonder also incorporates a reduced-friction wire feed path with the capability to handle wires down to 15 $\mu\text{m}$  diameter. It also features advanced imaging technology, a  $\mu\text{T}$  Sontics transducer to minimize pad disturbance and a precision-arc embedded fiber optic (EFO) system that enhances electronic ball control delivery and provides high repeatability in free air ball formation.

*Kulicke & Soffa (K&S), Willow Grove, PA*  
[www.kns.com](http://www.kns.com)

## Wire Bond Encapsulant

NoSWEEP wire bond encapsulant encapsulates narrow diameter, long and ultra-fine pitch wires on semiconductor devices without causing sweep. The silica-filled liquid polymer encapsulates wires, locking them in place and prohibiting their movement during process transition and transfer molding. It gives engineers greater latitude in creating alternative chip designs, such as 3-D stacked die packaging, without sweep concerns. The encapsulation technology enables die shrinks, fine-pitch designs, long wire applications with low-cost, high-density substrates and 35  $\mu\text{m}$  pitch roadmap wire bonding. Dispensing the encapsulant can be done in either in-line or off-line processes. The polymer is formulated to a suitable viscosity and surface tension range for each application. Flow rate can also be adjusted through process parameters.

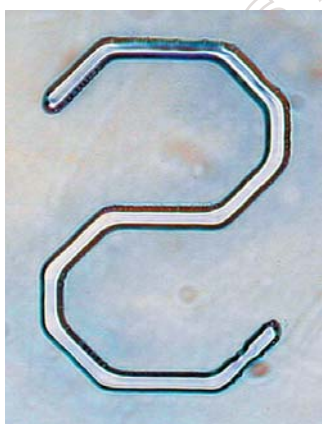
*Polyscience, Inc., Warrington, PA*  
[www.polysciences.com](http://www.polysciences.com)



## UV Laser Marking

JPSA Laser offers ultraviolet (UV) laser marking services on difficult materials such as glass, crystals, diamonds, sapphire, polymers, metals and glass. UV excimer laser systems vaporize sub-micron layers of material to create a non-destructive permanent mark for non-contact marking applications that require minimal thermal damage to surrounding material or little disruption of surface finish. UV laser light couples well to most reflective materials, resulting in sub-micron resolution marks. The visual image produced by a single laser pulse to an ablation depth of 0.1 microns can be easily achieved. UV laser light is best for many materials because it ablates thin layers without heating the surrounding materials. Marks are made due to surface texture alteration, photochemical change or material removal. In addition, higher resolution is possible with shorter-wavelength UV light.

*JPSA Laser, Hollis, NH*  
[www.jpjalaser.com](http://www.jpjalaser.com)



## Thin Film Chip Component Trim System

TrimSmart W778 thin film chip component trim system is optimized specifically for use in adjusting the resistive values of the latest generation of thin film chip resistors and resistor networks. The new system provides a combination of laser pulse width, wavelength and spot size that addresses issues specific to thin-film chip components. The trimmer increases capability and throughput and produces narrow cuts with a small kerf, a smaller heat-affected zone and less micro-cracking. Devices can be precisely and consistently adjusted, with up to 200–300X their pre-trim resistive value, depending upon part type.

*GSI Lumonics, Wilmington, MA*  
[www.gsilumonics.com](http://www.gsilumonics.com)

## Stacked MicroVia Technology

Stacked MicroVia (SMV) technology reduces layer count and improves performance of printed circuit boards (PCB) currently using standard and fine-pitch (compact) devices. It consists of .004 in. laser drilled holes that contain a solid copper plate, providing a reliable connection to multiple layers within the PCB. Designers can create blind stacked microvias and buried stacked microvias on any layer within the PCB, allowing the escape of high I/O ball grid arrays (BGAs) on multiple layers as well as fine-pitch devices. A solid copper interconnect provides additional current-carrying and thermal management capabilities.

*DDi Corp, Anaheim, CA*  
[www.ddiglobal.com](http://www.ddiglobal.com)

## Single-Chip Controller

Agere's PI-301 single-chip controller for inkjet and thermal fax applications is multi-processor system-on-a-chip (SoC) that combines as many as eight separate electronics components. The controller supports existing thermal fax designs while enabling the industry's transition to monochrome inkjet fax solutions. The chip manages image acquisition and processing, print mechanics—including scan control, print engine control, cartridge movement, ink firing and paper feed and positioning—as well as fax modem functionality and advanced display features. The chip also allows for consolidation of all external memory requirements into a single FLASH memory.

*Agere Systems Allentown, PA*  
[www.agere.com](http://www.agere.com)