Semiconductor Solutions

[Image: Close-up of a semiconductor chip with a glowing background]
Dispensing - Wafer Level Packaging

Features

- Remarkable Speed and Accuracy without Compromise – Vantage™ Series delivers both. The highly stable design makes it possible to dispense at significantly accelerated speeds without sacrificing dispense accuracy.
- An Expanded Dispense Area – accommodates larger workpieces while retaining a compact footprint to maximize space efficiency.
- Reliable – Up to 4x the usable life of competing jets on the market
- Easy to Use – Two-piece ReadiSet™ Jet Cartridge is quickly removed for easy cleaning or replacement, saving time and money
- Fast – Able to jet up to 5000 dots in 10 seconds, at up to 1000 Hz

Applications

- Side bonding
- EMI coating
- Wafer level underfill for Fan-Out wafer package

Dispensing - Assembly & Packaging

Features

- The Spectrum II Premier S2-900P implements new jetting, vision and software technologies to meet even the most challenging dispensing requirements
- The S2-900P incorporates the new IntelliJet® Jetting System, which dispenses the smallest dots and lines with market-leading reliability and consistency
- The new Monocle™ Vision Package delivers expansive field of view and contrast capabilities
- Pre-configured with common options for advanced packaging processes:
  - High precision X-Y-Z motion system for best-in-class wet dispense accuracy
  - Patented, closed-loop process controls for dispense weight
  - High-accuracy, non-contact laser height sensor

Applications

- 1st level FC Underfill
- MEMS Solder Paste
- EMI / Flux Spray Coating
- MEMS Silicon Jetting
Plasma Treatment - Wafer Level Packaging

Features

- Modular design allows capacity increase on a per plasma chamber basis
- EFEM integration supports from 1 to 4 plasma chambers EFEM
- Pocket chuck design ensures accurate substrate placement and centering, maximizing process repeatability
- Highly uniform plasma treatment with fast throughput rates
- Configurable for wafer, wafer-on-frame, and round/square substrates up to 480mm
- Plasma confinement technology isolates plasma distribution directly above the wafer, minimizing undesired secondary reactions
- Unique end-effector design can transfer a variety of wafer thicknesses and weights

Applications
- Descum/Stripping
- Activation
- Molding Compound removal
- Surface Roughening

Plasma Treatment - Assembly & Packaging

Features

- Flexible shelf architecture allows processing of a wide variety of part carriers in either direct or downstream plasma mode
- 13.56 MHz RF generator has automatic impedance matching for unparalleled process reproducibility
- Ultimate application flexibility for direct, downstream and ion-free (patented)plasma, which allows treatment without exposure to ion and UV
- Easily integrates with a variety of process equipment, including wire bond, die attach, dispense, mold, and marking
- Highly uniform plasma treatment with fast throughput rates

Applications
- Pre-W/B
- FC Underfill
- D/A
- Molding(Encapsulation)
**Manual X-ray Inspection**

**Features**
- Automatic inspection routines as standard including QFN, BGA, Pad, Wire sweep
- 100nm feature recognition
- No loss of magnification at oblique views
- Aspire FP™ detector up to 6.7 Mpixel
- Up to x68000 magnification
- High-throughput X-ray metrology and defect review of both optically hidden and visible features of TSVs, 2.5D & 3D IC Packages, MEMS, Wafer Bumps
- Non-destructive in-line wafer measurement of voiding and fill levels, overlay, critical dimensions and much more

**Applications**
- TSV voids, bump soldering (voids, open, crack)
- Wire bonding inspection (1st bond lift, 2nd bond crack, wire sweep, broken)

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**Bond Testing**

**Features**
- Flexible Wafer Map Creation
- Successfully Test Warped and Thin Wafers
- Various Micro Material Testing with Paragon Material
- Unique Dual Microscope Mount
- Virtually Operator Free Testing
- Full SECS/GEM Integration
- Clean Room Compatible
- Automatic Wafer Justifier

**Applications**
- Auto wafer bump shear test
- Auto wire pull/ball shear for lead-frame products
- Wire Pull/Ball Shear/Die Shear/Cold bump pull/Hot bump pull/Heated die shear test/Stud pull/die crush
Automated Inline X-ray Inspection

Features
- High speed AXI system for inline setups with ultra high magnification
- Ideal solution for LED, Sensor and wirebonding X-Ray Inspection
- Able to test Cu Wire diameter down to 0.8mil
- Microfocus X-ray tube (sealed tube / maintenance free)
  Tube Spec is up to 150KV/75W Detector gray levels depth: up to 16bits Ideal Solution for IGBT, Battery Inspection
- High Speed AXI System for In-line and Off-Line setups
  Transmission: 3-4 images/s Off-axis: 2-3 images/s
- 5-axes programmable motion system with servo drives (X-Y sample table, Z-axes X-ray tube, U,V detector axes)
- Automatic grey-level and geometrical calibration

Applications
- Power Hybrid/IGBT inspection
- LED/Sensor/Wire Bonding Inspection

Automated Optical Inspection

Features
- Megapixel color imaging
- High magnification top-down viewing camera
- Quick set-up
- High speed
- High defect coverage
- Low false failure rate

Applications
- 3D Die Placement/LED Inspection
- Wire bonding/Die Bonding Inspection
Scanning Acoustic Microscope

Features

- Maintains focus for warped wafers using the Quantitative Dynamic Z™ option
- SECS-II/GEM/SEMI 300mm Standards compliant
- Fully automated inspection of wafers from 100mm to 300mm
- Non-immersion scanning using Nordson SONOSCAN’s WaterFall Transducer™
- Industry leading Data Analysis package
- BOLTS standard load port for FOUPs, SMIF Pod, FOSB or open cassettes
- Numerous configuration options including JEDEC trays, Auer boats and IGBT modules

Applications

- MEMS STANDARD
  SEMI M58-0309
- IPC/JEDEC
  J-STD-020
  J-STD-035
- MIL/AERO STANDARD
  GEA-STD-0006
- AEROSPACE (NASA & ESA)
  PEM-INST-001 (NASA/TP-2003–212244)
  ESA/ESCC Basic Specification No. 25200
- MILITARY STANDARD
  MIL-STD-883, METHOD 2030
  MIL-STD-1580B
  REQUIREMENT 16.5.1.3

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