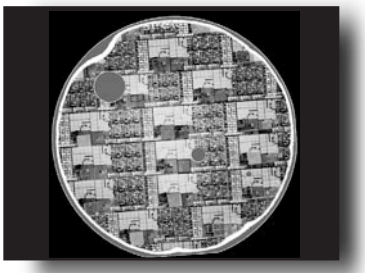
UHR Wafer™ System

The UHR Wafer™ System is an ultra-high resolution Scanning Acoustic Microscope (SAM) designed to non-destructively inspect silicon or GaAs wafers for internal discontinuities. Designed for either the laboratory or production environments, the system can provide unmatched resolution to satisfy all your failure analysis, process control or production needs.

Wafer bonding methods and techniques have become an increasingly important issue in the manufacturing of ICs, optoeletronical devices and micromechanical devices. There are several critical areas where investigation is required to establish adequate wafer reliability. Specifically, voids, delaminations and other contaminants like excess flux, can be detrimental to electrical and long term die and device functionality. SAM technology allows for reliability concerns to be screened prior to wafer dicing, thereby reducing scrap, reducing costs and ultimately improving reliability.

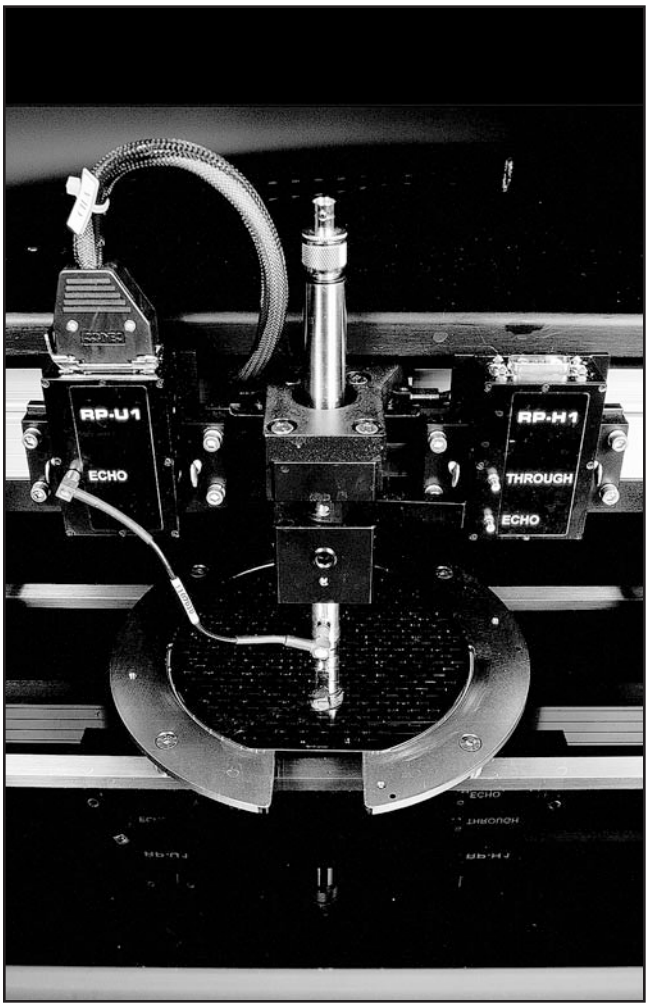
SAM Advancements

The UHR Wafer™ system differs significantly from other SAM systems on the market today. While maintaining Sonix' digital data acquisition advantage, the UHR Wafer™ offers a state-of-the-art linear servo motor delivering unparalleled scan resolution. In addition, the 0.5 micron encoder provides image resolutions of 2 microns or better. But scanning precision is not enough. Equally important is the advanced wafer analysis software that accompanies each system. The automatic defect detection and defect sizing software allows the operator to automatically determine which individual die meet a specific accept/reject criteria and aids in the "root cause" defect determination.



Wafer

UHR Wafer™ Specs



Scan Axis

- Positioning Device: Linear servo motor
- Servo Max Velocity: 830 mm/s
- Servo Repeatability: +/- 0.5 micron
- Linear Encoder Resolution: 0.5 micron
- Max Travel: 315 mm

Step Axis

- Positioning Device: Low-EMI microstep motor with zero-backlash lead screw
- Step Axis Resolution: 0.25 micron
- Max Travel: 327 mm

Focus Axis

- Positioning Device: Low-EMI microstep motor with zero-backlash lead screw
- Focus Axis Resolution: 0.5 micron
- Max Travel: 7 mm

Fixture

- Vacuum chuck fixture
- Fixtures are available for 6” (150 mm), 8” (200 mm), and 12” (300 mm) wafers
- Vacuum/blowoff feature
- Fixture rises out of water for loading/unloading

Immersion Tank

- Removable acrylic tank with pump and 30 micron filter, plus T- fitting for filling/draining

Ultrasonic Instruments

- DPR-500S Receiver with H1 remote pulser pre-amp (RPPA)
- UHF kit including U1 RPPA with expanded bandwidth receiver and UHF transducer

Enclosure

- Footprint: 838 mm x 1016 mm
- Table: 219 mm x 762 mm
- Includes base cabinet for computer and instrumentation, with casters and leveling feet
- Approved emergency off and safety interlock
- Ergonomic design of load/unload area and user controls
- Recommended floor space

8700 Morrissette Drive • Springfield, VA 22152
tel: 703-440-0222 • fax: 703-440-512
e-mail: info@sonix.com • www.sonix.com