Surface Mount Technology/Advanced Process Laboratory Equipment

You can turn to Universal's Surface Mount Technology/Advanced Process Laboratory for electronic assembly process support that will help you:
- increase your process yield
- improve your product reliability
- enhance your process knowledge
- shorten your development cycles

Production Equipment
- 265 DEK, GS screen printer with vision
- 265 DEK, GSX screen printers with vision(2)
- 8100 General Scanning Inc.- Luminics laser measurement system
- 4685A Universal GSM1 placement machine
- 5785A Universal GSMx~ linear motor placement machine
- 1800W Heller Industries, high temperature forced convection oven (N₂ capable)
- 1030N Vitronics-Soltec, XPM forced convection reflow oven (N₂ capable)
- M-Encap Asymtek Millennium, underfill dispense system
- 1100HR SRT, Summit forced convection rework station

Analytical Equipment
- Scanning Electron Microscopy (SEM)
  - Philips XL-30 Environmental Scanning Electron Microscope (ESEM) with secondary and backscatter electron detection*
  - Edax digital Energy Dispersive X-ray (EDX) analyzer*
  - Technics, Hummer-10 sputter coating system

Non-destructive Imaging
- Fein Focus, transmission X-ray analysis system with image processing capabilities
- Sonoscan, C-SAM scanning acoustic microscope inspection system
### Analytical Equipment (continued)

#### Thermal Analysis
- Perkin Elmer, Pyris 1, Thermogravimetric Analyzer (TGA)
- Perkin Elmer, Spectrum One, Fourier Transform Infrared (FTIR) Spectrometer
- Perkin Elmer, DMA 7e Dynamic Mechanical Analyzer (DMA)
- Perkin Elmer, Pyris 1, Differential Scanning Calorimeter (DSC)

#### Dimensional Characterization
- Cyberoptics, 250 laser profilometer
- Cordax, Coordinate Measuring Machine (CMM) with Digital Video Printer
- WYKO NT-2000 wafer bump measurement white light interferometer
- Capacitec, precision capacitance linear displacement measurement system

#### Cross-sectioning
- Buehler, metallurgical cross-sectioning equipment
- Struers Rotopol and Rotoforce semi-automated cross-section polishing equipment
- Tukon, microhardness tester

#### Optical Inspection
- Bausch & Lomb, Research II metallograph microscope
- Wild, M28 and M5A stereo microscopes with photographic capabilities
- Vision Engineering, Dynascope 3D viewer with photographic capabilities
- Leica DMRX high resolution stereo microscope with hot stage

#### Image Capture
- Kodak, DCS420 hand held digital camera
- Kodak, Mega Plus XRC microscope digital camera system
- Fuji, FUJIX HC-300Z digital microscope camera
- Sony Mavica hand held digital camera (2)
- Sony TRV8 Digital Handycam
- Kodak, high speed camera

*To be installed August 2000

### Materials Characterization
- Malcom, PC-1TL multi-range table top viscometer (spiral pump)
- Brookfield, RVT-DII viscometer/temperature bath
- Instron, 5500R-4502 materials testing machine with Merlin and Series IX software
- Alphametals, SMD 600 Ionograph
- Alphametals, 300-64 sirometer with electromigration option
- Kester, KWB-1000, automated wetting balance

### Mass Measurement
- Mettler, AT20 precision micro-balance (1x10^-6 gram resolution)
- Denver Instruments, digital balance

### Process Characterization
- ECD, Super Mole/Thin Line Mole and Gold Mole temperature profilers
- Delta "F", series 100 trace oxygen analyzer
- Ametek, TM-1B oxygen analyzer

### Reliability Monitoring
- Analysis Tech, model 256 event detector (3)
- Hewlett Packard, 3457A programmable Digital Volt and Ohm Meter with PC interface

### Environmental/Test Chambers
- Blue M Electric, LTB-ATS-C liquid to liquid thermal shock
- Thermotron, ATS-100 air to air thermal cycling chamber
- Thermotron, SM-3.5S temperature and humidity chambers (2)
- Despatch, LPB 1-78V HAST/Sealed Temperature/Humidity Chamber
- Lunaire, CE205 forced convection batch ovens (2)
- Blue-M IGF series N, capable batch oven
- Quincy Labs, 20GC and 10G natural convection ovens
- Precision, forced convection oven
- Revco, ULT 72586, ultra-low temperature freezer

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