

**3610™**
Automated Programming System**Simple. Efficient. Versatile.**

The 3610 is the first automated programming system to incorporate self-teaching and non-stop operation. It is designed to be the most convenient way to program all varieties of surface mount devices. The 3610 is a powerful tool capable of accurately programming up to 700 devices per hour and is designed to be the most simple and efficient programming system for medium-volume production environments.

- High-speed universal programming system with support for over 23,000 devices
- Production throughput up to 700 devices per hour
- Programs Flash memories, FPGAs, antifuse FPGA, PLDs, and Microcontrollers, including MCU's with embedded Flash memory
- Programs at an unsurpassed 0.24s/Mb* with Sixth Generation Technology
- Very low voltage support down to 1.5V (Vdd)
- On-the-fly vision centering and fine-pitch handling without throughput reduction
- Handles all package types from DIP to μ BGA including very small package such as SOT23 and MSOP8, a BPM Microsystems exclusive
- Automated tray shuttles provide true non-stop operation
- Automatic self-teaching
- Small footprint
- USB 2.0 communications bus
- Configurable options and quick job changeover make it ideal for high mix or high volume production
- Variety of input/output and marking options with tubes, trays or tape



PICK & PLACE SYSTEM

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| Handler Throughput: | 700 DPH (for comparison purposes) |
| Component Processing Range: | SOT23 to 240-pin QFP |
| Laser Alignment: | component range - SOT23 to 208-pin QFP, minimum pitch 0.5mm |
| Placement Force: | 60-600 grams positional control |
| Dimensions: | length 50" (127cm), width 24" (61cm), and height 45" (114.3cm) |
| Weight: | 400 lbs. (182kg) |
| Shipping Weight: | 650 lbs. (295kg) |
| Shipping Dimensions: | length 64" (162cm), width 38" (96cm), and height 60" (162cm) |
| Self Test: | power supplies, CPUs, memory, X, Y, Z, θ motion systems, nozzle run-out and height |

POSITIONING SYSTEM

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| X-Y Drive System: | high-performance stepper motor driven precision belt |
| X-Y Encoder Type: | linear optical scale |
| X-Y Axis Resolution: | 0.0002" (0.0050mm) |
| Z Drive System: | high-performance stepper motor driven lead screw |
| Theta Drive System: | precision stepper motor-driven direct drive assembly |
| Theta Axis Resolution: | 0.014° |
| Theta Axis Repeatability: | ± 0.02" |
| Placement Accuracy: | 90 μ @ 4 sigmas, 67 μ @ 3 sigmas |

VISION SYSTEM

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|---------------------------------------|--------------------------------|
| Type: | CyberOptics Laser Align system |
| Component Location Resolution: | 1 micron |

SYSTEM REQUIREMENTS

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| Air Pressure: | 80 psi (5.56 bars) |
| Air Flow: | 2.0 SCFM (50.1L/min) |
| Operational Temperature: | 55° to 90° F (13°-32° C) |
| Relative Humidity: | 30-80% |
| Minimum Floor Space: (without tape and reel attachment) | length 72" (182.9cm) and width 42" (106.6cm) |
| Input Line Voltage: | 100-130/200-260 VAC |
| Input Line Frequency: | 50/60 Hz |
| Power Consumption: | 1 KVA |

PROGRAMMING SYSTEM

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| Architecture: | Concurrent, independent universal programmer at each site |
| Devices Supported: | including, but not limited to, Antifuse, Low Voltage, PROM, EPROM, EEPROM, Flash EEPROM, Microcontrollers, SPLD, CPLD, FPGA |
| Technologies Supported: | TTL, CMOS, ECL, BiCMOS, Flash, EPROM, EEPROM, fuse, anti-fuse, (including FPGAs) |
| Included System Controller: | High-Grade Industrial Pentium PC, SVGA monitor, keyboard and mouse |
| Calibration: | automatic self-calibration |
| Diagnostics: | pin continuity test, RAM, ROM, CPU, pin drivers, power supply, communications, cable, calibration, timing, ADC, DAC, actuator, leakage current |
| Memory: | 64MB per site |
| Pin Controllers: | one CPU with hardware accelerator per site |
| Programming Sites: | 4 |

PIN DRIVERS

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|--------------------------|---|
| Quantity: | 240 per site |
| Analog Slew rate: | 0.3 to 25V/ μ s |
| Vpp Range: | 0-25V |
| Ipp Range: | 0-70mA continuous, 250mA peak |
| Vcc Range: | 0-12V |
| Icc Range: | 0-1A |
| Very low voltage: | to 1.5V (Vdd) |
| Rise Time: | 4ns |
| Overshoot: | none |
| Clocks: | continuously variable 1 MHz to 30 MHz |
| Protection: | overcurrent shutdown, power failure shutdown |
| Independence: | pin drivers and waveform generators are fully independent and concurrent on each site |

SOFTWARE

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|-------------------------|---|
| File Type: | binary, Intel, JEDEC, Motorola, POF, straight hex, hex-space, Tekhex, Extended Tekhex, and others; automatic file type recognition |
| Device Commands: | blank check, sum, compare, program, test, verify, secure, continuity, ID check, erase |
| Features: | graphic display or job status, JobMaster™ control software, data editor, revision history, session logging, on-line help, device and algorithm information, optional simple and complex serialization |