**Programmer Features**

- Universal support for the latest programmable device architectures (OneNAND™, eMMC™, INAND™, multiNAND™, MLC, SLC, and more).
- Includes 16 GB of onboard memory per site and 64-bit architecture, breaking past the 4 GB data density barrier.
- Modular sites share common hardware and software, resulting in process consistency between 8th Gen automated and manual programmer models.
- Handles a wide range of packages including very small packages such as MSOP8, TSSOP6, and SO72 as small as 1.63 mm by 2.95 mm.
- Quick setup and changeover with automatic self-teaching.
- Optional peripherals: Tape I/O, Tray Stacker, Tray Shuttle, Tube I/O, Laser Marker.
- Non-stop operation with dual tray shuttles.
- Laser marker with serialization and date code optional.

**Socket Card Features**

- Compatible with Flashstream socket cards.
- Automated and manual 8th Gen models share the same socket cards.
- Purchase one socket card for first article approval.
- Replace only worn or damaged socket with receptacle-base socket option.
- Active, Pass and Fail indicators per device.
- Support for thousands of devices and a wide variety of packages.

**Software Features**

- Custom and manufacturer-approved NAND Flash bad block handling methods available; bad block replacement scheme included.
- DCAT™ - On-chip Error Tolerant.
- Serialization support on all sockets.
- JobMaster™ - production automation tool.
- File encryption for IP protection.
- Supports third party label printers.
- Automated job event notifications via email.
- View important system events graphically with Log Visualization.
- Application Programming Interface option (API).
- Advanced Serialization with External Serialization Server (ESS).
- Guaranteed release dates for new algorithm additions.

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**8th Generation Automated Programmer**

Designed for high volumes, the model 4800 is a fine-pitch automated device programmer that combines 8th Generation universal device support, the unrivaled speed of Vector Engine Co-Processor® technology, and on-the-fly vision centering. The model 4800 can utilize up to nine sites, programming up to 36 devices in parallel with individual socket cards, to achieve a production throughput of up to 1,500 devices per hour.

**Universal Device Support**

The model 4800 is designed to program microcontrollers, high-density flash memory, E/EPROM and other device technologies with densities up to an 8 Eb theoretical limit. It also supports very low voltage devices down to 0.7 Vdd.

**Speed**

BPM Microsystems’ Vector Engine Co-Processor hardware-accelerates waveforms during the programming cycle. Faster speeds are achieved through synchronous operations that eliminate the dead times so the device under test no longer waits for the programmer. The result is programming near the theoretical limits of the silicon design — the faster the device, the faster the device is programmed.

**Robust Handler**

The robust design of BPM Microsystems’ 4000 series device handling systems has undergone more than a decade of enhancements, providing the most advanced version to date with the model 4800. Integrated into the model 4800 is the LaserAlign™ sensor from CyberOptics®, which automatically aligns devices “on-the-fly” resulting in unsurpassed placement accuracy and high first pass yields at full mechanical throughput. The system also offers flexible options for input and output media with choices of tray, tape or tube that can be used simultaneously.

**Socket Cards**

As the electro-mechanical interface between the programmable semiconductor device and the programmer, BPM Microsystems’ socket cards with a receptacle socket option offer the most cost-effective and efficient programming solution in the industry. Individual socket cards can be fully utilized and replaced without dramatically affecting programming capacity. The fault-tolerant socket card design increases your manufacturing up-time and saves replacement costs by as much as 75 percent.

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**BPM Microsystems**

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www.bpmmicro.com
**PICK & PLACE SYSTEM**

- **Handler Throughput:** 1500 DPH
- **Component Processing Range:** SOT73 to 240-pin QFP
- **Laser Alignment:** ± 0.0024° (0.06mm)
- **Placement Accuracy:** ± 0.0012° (0.03mm)
- **Placement Repeatability:** ± 0.0012° (0.03mm)
- **Placement Force:** 60-600 grams positional control
- **Dimensions:**
  - Length 42” (106.6cm), width with laser 67” (169.9cm), and height with laser 42” (106.6cm)
- **Shipping Weight:** 1700 lbs. (771 kg)
- **Shipping Dimensions:**
  - Length 48” (121.9cm)
  - Width 48” (121.9cm)
  - Height 69” (175.3cm)
- **Self Test:**
  - Power supplies, CPU, memory, X, Y, Z motion systems, spindles, run out and height, vacuum system

**POSITIONING SYSTEM**

- **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)
- **X-Y Axis Maximum Velocity:** 30”/sec (762mm/s)
- **Z Drive System:**
  - High-performance stepper motor driven lead screw
- **Placement Accuracy:** ± 0.0015” (0.038mm)
- **Z Axis Resolution:** ± 0.0002” (0.0050mm)
- **Z Axis Repeatability:** ± 0.0015” (0.038mm)
- **Theta Drive System:**
  - Precision stepper motor-driven anti-backlash twin gear assembly
- **Theta Axis Resolution:** 0.015°
- **Theta Axis Repeatability:** ± 0.02°

**VISION SYSTEM**

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

**SOFTWARE**

- **File Type:** Binary, Intel, Motorola, R8000, straight, hex, hex-scan, Tektronix Extended, Techx, ASCII, hex, QVF, LOG, MER, and others
- **Device Commands:** blank, check sum, compare, options, program, test, verify, secure, continuity, ID check, erase, 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

**SYSTEM REQUIREMENTS**

- **Air Pressure:** 80 psi (5.56 bars)
- **Air Flow:** 8.1 SCFM (203 l/min)
- **Operational Temperature:** 55°F to 100°F (13°C to 38°C)
- **Relative Humidity:** 30-90%
- **Floor Space:**
  - Length 60” (152.4cm) and width 75” (190.5cm)
  - 100-240 VAC
  - 50/60 Hz
  - 2.4 KVA

**PROGRAMMING SYSTEM**

- **Architecture:** Concurrent, independent universal programmer at each site
- **Devices Supported:** Including, but not limited to, Low Voltage, PROM, EPROM, EEPROM, Flash EEPROM, Microcontrollers, SPLD, CPLD, FPGA
- **Included System Controller:** High-Grade Industrial Intel Core Z Duo, SVGA monitor, keyboard and mouse automatic self-calibration
- **Pin continuity test, NAND, pin drivers, power supply, communications, calibration, timing, ADC, DAC, interconnects**
- **Memory:** 16 GB per site
- **Programming Sites:** Up to 9 sites

**PIN DRIVERS**

- **Quantity:** 240-pins standard
- **Vpp Range:** 0-13V±
- **Ipp Range:** 0-50mA continuous
- **Vcc Range:** 0-7V±
- **Icc Range:** 0-450mA
- **Rise Time:** 4ns
- **Protection:** Overcurrent shutdown, power failure shutdown
- **Independence:** Pin drivers and waveform generation are fully independent and concurrent on each site

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