BPM MICROSYSTEMS

4800

Automated Programming System

Eighth Generation Programming Technology

PROGRAMMER FEATURES

- Universal support for the latest programmable device architectures (OneNAND™, eMMC™, iNAND™, moviNAND™, 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, TSOC6, and SOT23 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
- BERT™ - Bit Error Rate Tolerance
- 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

8th Generation Automated Programmer

Designed to program devices in 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 high 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

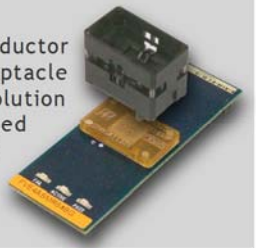
VECTOR ENGINE CO-PROCESSOR

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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4800
Technical Specifications

PICK & PLACE SYSTEM

Handler Throughput:	1500 DPH
Component Processing Range:	SOT23 to 240-pin QFP
Laser Alignment:	component range - SOT23 to 208-pin QFP, minimum pitch 0.5mm
Placement Accuracy:	± 0.0024" (0.06mm)
Placement Repeatability:	± 0.0012" (0.03mm)
Placement Force:	60-600 grams positional control
Dimensions:	length 42" (106.6cm), width with laser 63" (160.2cm), width without laser 42" (106.6cm), and height with light tower 72" (182.8cm)
Shipping Weight:	1700 lbs. (771 kg)
Shipping Dimensions:	length 48" (122cm), width 48" (122), and height 69" (175cm)
Self Test:	power supplies, CPUs, memory, X, Y, Z, θ motion systems, spindle 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 (76cm/s)
Z Drive System:	high-performance stepper motor driven lead screw
Placement Accuracy:	90µ@ 4 sigmas, 67µ@ 3 sigmas
Z Axis Resolution:	± 0.001" (0.025mm)
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, RAM, straight hex, hex-space, Tekhex, Extended Tekhex, ASCII, hex, OMF, LOF, MER, and others
Device Commands:	blank, check sum, compare, options, 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

SYSTEM REQUIREMENTS

Air Pressure:	80 psi (5.56 bars)
Air Flow:	8.1 SCFM (203 1/min)
Operational Temperature:	55° to 90°F (13°-32°C)
Relative Humidity:	30-90%
Floor Space:	length 60" (152.4 cm) and width 75" (190.5cm)
Input Line Voltage:	100-240 VAC
Input Line Frequency:	50/60 Hz
Power Consumption:	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 2 Duo, SVGA monitor, keyboard and mouse
Calibration:	automatic self-calibration
Diagnostics:	pin continuity test, NAND, pin drivers, power supply, communi-cations, 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 Slew rate 2V/us
Ipp Range:	0-50mA continuous
Vcc Range:	0-7V Slew Rate 2V/us
Icc Range:	0-450mA
Rise Time:	4ns
Protection:	overcurrent shutdown, power failure shutdown
Independence:	pin drivers and waveform generators are fully independent and concurrent on each site

CE

4800_EN_0211
REV A

EIGHTH 8TH GEN GENERATION

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