



FLASHSTREAM™
FLASH VECTOR PROGRAMMING SYSTEM

3000FS™
Automated Flash Vector
Programming System

- High-speed Flash programming with 16 sockets utilizing Flashstream socket cards
- Production throughput up to 1050 devices per hour
- Supports high density NAND and NOR flash memory as well as EPROM's
- 32Gb onboard memory module included per site. Expandable for future needs
- 20ns verify with Vector Engine Co-Processor technology
- Serialization support on all sockets
- NAND Bad Block handling:
 - Bad block replacement scheme included
 - Custom and manufacturer approved NAND Flash bad block handling methods available
- Very low voltage support
- On-the-fly vision centering and fine-pitch handling without throughput reduction
- Handles all package types from DIP to µBGA 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
- The fastest programming times and unrivaled throughput means lower cost-per-device

Fast, Efficient Automated Flash Programming

The 3000FS is a fine-pitch automated device programmer designed specifically for flash memory programming. The 3000FS combines the best qualities of our robust 3000 series device handling system, with our latest Flashstream programmer site technology, to produce the fastest production solution for flash memories. As an example, the 3000FS can produce a fully programmed 512Mb NAND flash every 3.4 seconds. On-the-fly vision centering allows the 3000FS to handle almost every semiconductor package on the market today including TSOP, BGA's while maintaining full handling throughput. The 3000FS offers flexible options for input and output media with choices of tube, tray or tape. Whether you are programming 20,000 or 500,000 parts per month, the 3000FS is the fastest production solution for flash memory programming on the market today.

Next-Gen Processing Power

Featuring the Vector Engine Co-Processor™, which gives the Flashstream the programming industry's lowest programming overhead while maintaining the highest production quality programming signal; an industry first for production programming.



BPM MICROSYSTEMS

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PICK & PLACE SYSTEM

Handler Throughput:	1050 DPH
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 in. (96cm), and height 60 in. (162cm)
Self Test:	power supplies, CPUs, memory, X, Y, Z, θ motion systems, nozzle run out and height

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
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

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

SYSTEM REQUIREMENTS

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

HARDWARE

Architecture:	Vector Engine Concurrent Programming System with Vector Engine Co-Processor
Programming Sites:	2 to 4 sites, 1 to 4 sockets per site
Calibration:	annual, may be performed on site with included socket card
Diagnostics:	pin continuity test, RAM, pin drivers, power supply, communications, calibration, timing, ADC, DAC, interconnects
Memory:	32.7Gb per site standard
Communications:	USB 2.0
Data Pattern Broadcast:	31 Mb/s 20ns cycle
Firmware ROM:	No firmware ROM, Software automatically performs firmware download

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:	0-150mA
Rise Time:	4ns
Protection:	overcurrent shutdown, power failure shutdown
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

Required:	BPWin
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, erase
Features:	data editor, revision history, session logging, on-line help, device and algorithm information, Jobmaster™ software

