



## POWERED BY 9TH GENERATION PROGRAMMING TECHNOLOGY



High throughput, fast changeover, and extreme flexibility, the **4900 delivers the quality and reliability customers count on**, for the most demanding production requirements.

## 4900 Delivers Reliable, Fast, and Accurate Production Programming Performance

### Unmatched Programming Speed

- High programming speed for MCUs, eMMC, NAND, NOR and Serial Flash
- Up to 100MBytes/s for the industry's fastest program /verify times
- Download image files up to 25MB/s to all programmers simultaneously
- Faster programming times reduces investment in the number of systems, sites and sockets you need to buy
- Up to 9 times faster than competing universal programmers
- The Largest Memory Support in the industry - **512GB**
- As newer and faster devices are introduced onto the market, 9THGEN Vector Engine Co-Processor® technology adapts to the faster speeds, delivering more value with improved performance

### Device Support Without Limits

- True universal support – One solution for all your programming requirements
- Programming a wider range of devices on the same socket reduces tooling and job change over costs
- Compatible with existing 7th and 8th generation socket cards and algorithms, 9THGEN offers a large library of current support while reducing cost and time to market for future support with the use of existing socket designs
- Low cost replaceable socket designs combined with fast programming speeds provides the lowest cost per device
- IP protection with data encryption and advanced serialization options ensures that your data is easily managed and secured

### Production Capabilities that Deliver

- Fine-pitch automated device handling with vision alignment delivers proven performance
- Up to twelve 9THGEN Programming sites, with up to 48 individual Socket Cards
- Flexible options for input and output media with choices of automated tape, tray and tube
- Marking options include laser, label and the ID-PRO ink-based conformation marking system
- 3D vision option which inspects BGA, CSP, QFP, TSOP, SOIC and J-Lead devices for coplanarity, bent lead, pitch, width, diameter, standoff and XY errors
- Software API tools - Allows tight integration with your manufacturing process for inventory control and process management

## Complete Ecosystem

- BPM has ownership of all designs, manufacturing and support for all programming sites, robotics, vision systems, and software so we can provide unmatched support and responsiveness.
- Reduce your time to market by doing new product introduction/first article through automated production with the same hardware, algorithms and software.
- 1900 for Fast First Articles, 2900 for Manual Production, 3900 and 4900 for Automated Production

# 4900 UNIVERSAL AUTOMATED PROGRAMMING SYSTEM

## Product Specifications

### PICK & PLACE SYSTEM

Handler Throughput:	up to 1500DPH
Component Handling Range:	SOT23 to 240-pin QFP
Laser Alignment:	component range - SOT23
Placement Accuracy:	$\pm 0.0012"$ (0.06mm)
Placement Repeatability:	$\pm 0.0024"$ (0.03mm)
Placement Force:	60-600 grams positional control
Dimensions:	length 42" (106.6cm), width with laser 63" (160.2cm) width without laser 42" (106.2cm), height with light tower 72" (182.8cm)
Shipping Weight:	182kg
Shipping Dimensions:	length 48" (122cm), width 48 (122cm), height 69" (175cm)
Self Test:	power supplies, CPU, memory, X, Y, Z, theta 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:	90 $\mu$ @ 4 sigma, 67 $\mu$ @ 3 sigma
Z axis Resolution:	$\pm 0.001"$ (0.025mm)
Z axis Repeatability:	$\pm 0.0015"$ (0.038mm)
Theta Drive System:	precision stepper motor-driven direct anti-backlash twin gear assembly
Theta Axis Resolution:	0.015°
Theta Axis Repeatability:	+/- 0.2mm

### VISION SYSTEM

Type:	Cyberoptics® LaserAlign™
Component Location Resolution:	1 micron

### SYSTEM REQUIREMENTS

Air Pressure:	80psi (5.56 bars) minimum
Air Flow:	2.0scfm (50.1L/min)
Operational Temperature:	55° to 90° F (13° to 32° C)
Relative Humidity:	30-80%
Minimum Floor Space:	length 183cm x width 107cm
Input Line Voltage:	100-130/200-260VAC
Input Line Frequency:	50/60 Hz
Power Consumption:	1KVA

### SOCKET OPTIONS

Socket Modules:	Support for existing FX and FVE socket modules. Universal 1900/2900 socket cards with 144 universal pins. Available Socket Cards including, but not limited to, standard PLCC, CSP, BGA, $\mu$ BGA, SOIC, QFN, MLF, LAP, QFP, TSOP, LCC, SDIP, SIMM Other Options: Advanced Feature Software, simple and complex serialization, CJob, Monitor and CJob Control (API), Receptacle Socket options, EDGE™ High Performance Socket Cards
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### PROGRAMMING HARDWARE

Architecture:	9THGEN Concurrent Programming System with Vector Engine Co-Processor
Programming Sites:	Up to 12 sites, 1 to 4 sockets per site
Calibration:	annual, may be performed on site
Diagnostics:	RAM, communications, calibration, timing, LEDs, fans, pinole, power supplies, voltage/current/slew for vpp and vcc, high current vcc mode, digital pin drivers, and relays. Ground Transistors, digital driver path to programmer, dcard LEDs, customizable diagnostics per dcard.
Memory:	512GB per site
Communications:	USB 2.0
Data Pattern Broadcast:	25MB/s
Firmware Updates:	Software automatically performs firmware download

### PIN DRIVERS

Quantity:	240-pins standard, per site
Vpp Range:	0V to 25V
Ipp Range:	Up to 1.2A total
Vcc Range:	0V to 13V
Icc Range:	0-2A
Rise Time:	4ns
Protection:	overcurrent shutdown, power failure shutdown
Independence:	pin drivers and waveform generators are fully independent and concurrent on each site
Digital Range:	0-4.5V
Clocks:	800kHz to 64MHz

### SOFTWARE

Required:	BPWin
File Type:	binary, Intel, Motorola, RAM, straight hex, hex-space, Tekhex, Extended Tekhex, ASCII, hex, OMF, LOF, MER and others
Device Processes:	ID check, blank check, continuity, auto start, compare, read, erase, program, verify, multi-pass verify, test, checksum, secure, device configure, auto-range, options and more
Operating Systems:	Windows XP Professional, Windows 7 32bit
Network Interface:	Gigabit Ethernet

### PERIPHERAL OPTIONS

Peripherals:	Tape I/O, Tray Stacker, Tray Shuttle, Tube I/O, Laser Marker, Labeler. ID-PRO® ink-based confirmation marking system
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### WARRANTY

Hardware:	One Year Hardware Warranty
Software:	One Year Software Support



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