SG5000
Automated Programming System

New Generation Quad-Site Gantry with Advanced Features and up to 3000 UPH Automated Programming System

Quad Nozzles

Product Highlights

- Quad nozzle gantry design for optimized throughput
- Up to 3000 UPH for high volume mass production
- Flexible multi media I/O include tray, tape and tube package
- Embedded SG8000 universal programmer with up to 64 programming sites, supports EEPROM, NOR, Nand, MCU, CPLD, FPGA, eMMC, UFS
- Easy-to-use teach mechanism with minimum overheads for change-over
- Optional laser marking and optical 2D/3D inspection module
- One-Piece-flow operation

SYSTEM GENERAL

Synchronized Quad-site Peripherals for Optimized Throughput
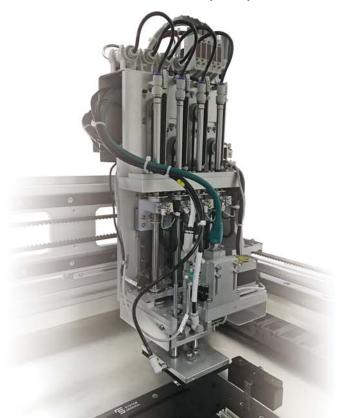

To synchronize with the quad-site gantry, the SG5000 software is upgraded to interface System General's gang 4 and gang 8 socket board series and multi upward camera system, to achieve optimized throughput.
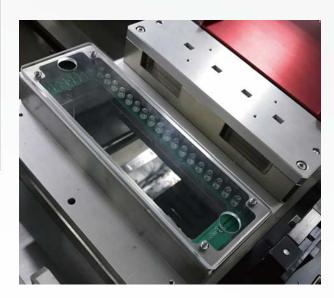
Pioneers of Quad-site Gantry Design

The gantry of SG5000 is designed the four pick-up heads to travel at high speeds in order to reach a throughput of 3000 UPH.

The semiconductor industry continues to deliver on the market need for small, ultra-thin packages, System General has kept pace through continual innovation of the gantry and nozzle design. On the SG5000, each nozzle has its own airflow/vacuum controls and pick-up adjustment. The gantry is easily taught to pick-and-place 4 devices simultaneously, stably.

High Accurate Multi Vision Alignment and Minimum Positioning Recognition Overhead

The SG5000 is equipped with multi vision camera for accurate insertion alignment. To adapt SG gang series socket board, its efficient alignment mechanism helps reduce the Teach and PRS overhead associated with each programming cycle.
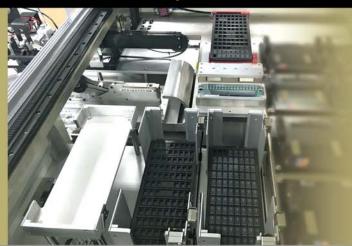

The Optional Mechanical Precisor

Simultaneously aligns 4 devices for pickup offset. This reduces alignment overhead when the quad-site socket boards are used.

Automated IC Programming Solution for One-Piece-Flow Operation

The SG5000's design philosophy is to provide a one-piece-flow programming workstation capable of completing programming tasks with minimal human intervention. This handler comes standard with a tray-to-tray interface and an automatic tray stacker. Additional options available for the SG5000 workstation include device laser marking, device labeling, a tape and tube interface.

The tray stacker on the SG5000 is designed to transport light-weight tray with BGA,QFP,TSOP and other fine-pitched devices on them. It accommodates up to 20 JEDEC tray

Flexible Socket Board Designed to Maximize Your Programming Throughput

System General announces its innovative design of single and gang 8 socket board series, aim to slash the algorithm development time to 50%, and to enhance the programming flexibility for SPI, NOR, NAND, MCU in this gang-site socket boards. To provide a flexible structure for algorithm development and also an affordable solution to the customers, programming throughput improves by nearly 8x.

One Of Universal Programmers Ever Built

The new model SG8000 programmer is designed for universal device support, such as SPI, NOR, NAND, eMMC. MCP. PLD.CPLD. FPGA, UFS and more.

Not only it combines maximum efficiency with pipelined throughput and our self-developed tools.

NAND/eMMC/UFS Image Builder flexible interface to manage an additional configuration and register settings.

SG8000 programming platform also provides systematic report that assists the users to monitor the programming yield rate, track the equipment performance, and to manage the failure-cause analysis via one integrated programming platform.

SG8000 is supported the various API for customize MES.

SG8000 Universal Programmer

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Specifications

• Component Handler General Information •

- Throughput: 3000UPH with zero index time
- Placement accuracy: ±0.02mm
- Placement repeatability: ±0.02mm
- Placement force: 95 grams
- Pick-and-place method: Quad nozzles
- Dimension: L:1210 x W:1310 x H: 1500(mm)
- Shipping Dim.: L:1920 x W:1470 x H:1900 (mm)
- Net weight: 700 kgs
- Gross weight: 750 kgs
- Safety : CE complaint

• Placement System •

- X-Y axes driving system: Servo motor
- X axis resolution: 0.001mm
- Y axis resolution: 0.001mm
- X-Y repeatability: ±0.01mm
- Z-theta driving system: Stepping motor
- Z-axis resolution: 0.18°
- Z-axis repeatability: ±0.02mm

• Position recognition system •

- Gantry: quad nozzle gantry
- Upward camera x4: (Standard) Component position recognition system
  (1.3M pixels, FOV 35x35mm)
- Downward CCD x1 for teach alignment
  (1.3M pixels, FOV 35x35mm)
- Alignment Mechanism: Mechanical teach positioning (Precisor)
- Downward CCD for teach alignment

• Programming System •

- Up to 8 units of SG SG8000 universal programmer
- Programming sockets: up to 64 sockets sites for eMMC and 64 socket sites for memory/MCU
- Devices support: EPROM, EEPROM, NOR, NAND, MCU, PLD, CPLD, FPGA, eMMC and UFS
- Package types: Supports TSOP, PLCC. BGA, SOIC, SOP, QFN, CSP, TQFP and more

• System Software •

- User interface: Window-based HMI
- Operating system: Window 10

• Operating Requirements •

- Input voltage: Single-phase 220 VAC
- Input line frequency: 50/60Hz 15A
- Power consumption: 2.0KVA
- Compressed air pressure: 0.4Mpa—0.5Mpa
- Air flow: 50 liters/min
- Operation temperature range: 15~30°C (59~86°F)
- Relative humidity: 35%~90%

• Optional Subsystems •

- Auto tray stacker
- Tape and reel input/output unit
- Tube input/output unit
- Ink dot Marker
- Inkjet Marker
- Label Feeder
- Bowl Feeder
- Marking on Tray

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