AP760
Automated Programming System

3rd-Generation Quad-Site Gantry with Advanced Features and 2400+ UPH

Quad Nozzles

Product Highlights

- Adjustable airflow, vacuum and pickup settings at each nozzle ensures reliable handling for the latest small and ultra-thin package types
- New ball screws and servo motors speed up the travel time of the gantry
- Matching four I/O peripherals to the quad-site gantry increases system throughput
- All device media types and I/O peripherals are supported for one-piece-flow operation
- The new location of socket actuation eliminates the associated overhead and prolongs the insertion life of the sockets
- The new 9800 programmers + N-type socket boards supports simultaneous programming of 4 NAND Flash at each cycle
- The new "Fast-Teach" mechanism self-aligns the gantry quickly, with minimal human intervention

SYSTEM GENERAL

System General, Pioneers of the Quad-site Gantry

Our quest for a better automated programming system began with a simple question – why can't an automated handler pick and place more than a single device at each cycle? Since then, years of development and experience gained across prior offerings have combined to yield the latest breakthrough - the all new AP760!

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 designs. On the AP760, each nozzle has its own airflow/vacuum controls and pick-up adjustments. The gantry is easily taught to pick-and-place 4 devices simultaneously, stably!

The AP760 – The Next Step of Innovation

• **The new socket actuators** gently open the socket with symmetrical force to extend the insertion life of your socket investment.

• **The over-hang gantry design** allows more space for up to 7 device carriers and I/O peripherals.

• **The optional "Precisor"** simultaneously aligns 4 devices for pickup offset. This reduces alignment overhead when the quad-site socket boards are used.

• **Newly designed Ball Screws and Servo Motors** ratchet up the gantry speed, a 30% improvement compared to the preceding model.

## Synchronized Quad-site Peripherals for Optimized Throughput

To synchronize with the quad-site gantry, the AP760 software is upgraded to interface to 4 sets of I/O peripherals. The AP760 accommodates 4 Tape Input Feeders in one docking plate, as well as the custom 4-line Tube Input Feeder and 4-line Tube Output Feeder, to achieve optimized throughput.

- **The latest H9800 programmers and N-type socket boards** incorporate new buffer designs, allowing 4 Memory devices to be serialized, or 4 NAND Flash to be programmed, simultaneously at each cycle.
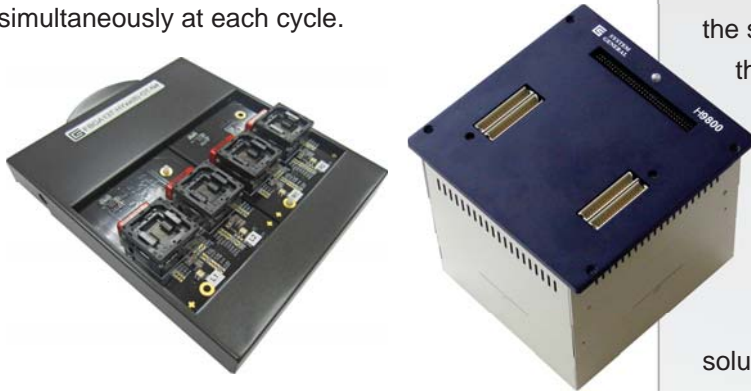
- **Our field-proven Task and Project software** follows industry standards for providing quality assurance from the initial "First Article" programming to the final mass production stage. Since these files are electronically transmittable, the same Task and Project is easily distributed to all of your programming locations.
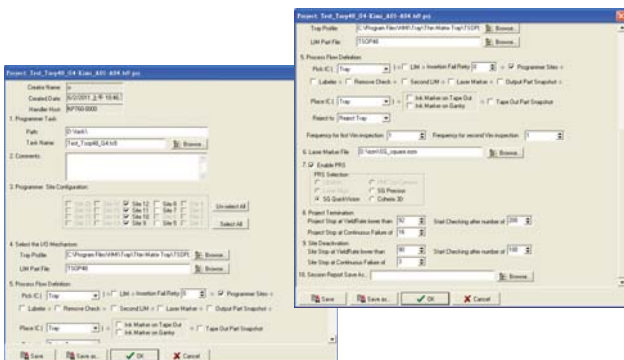
Support, the Essence for Automating Programming Operations

The AP760 was designed to be field-serviceable by the customers' trained technicians. We encourage our customers to take maintenance ownership of the system in order to minimize downtime. To meet this goal, our field service engineers provide in-depth training courses and detailed documentation when the handler is installed. Whenever a service issue does arise, an electronic library of "Standard Operating Procedures" with photos and step-by-step details provides effective, downtime-saving solutions. In the event that on-site services are required, our field service is available from our corporate facilities in Taiwan, the USA, and China, and from our distribution network worldwide.

The AP760, equipped with the 9800 Universal Programmers, supports Memory, Microcontrollers and Programmable Logic. Additionally, your AP760 comes with free life-time device updates, a significant cost saving to your programming operations. Since many of our customers are the world's top-tier programming centers and renowned EMS, our extensive library of device support may already contain those devices you need to program!

Specifications

• Pick & Place System •

- ▸ Throughput: 1400 (Tray I/O with Precisor)
- ▸ (UPH)   2400 (Gang4 Tube I/O with Precisor)
- ▸ Placement accuracy: ±0.05mm
- ▸ Placement repeatability: ±0.03mm
- ▸ Placement force: 95 grams
- ▸ Pick-and place method: 4 vacuum nozzles on Gantry
- ▸ Component detection: Vacuum sensor

• Physical Specifications •

- ▸ Dimension: 180cm(L) x 120cm(W) x 165cm(H)
- ▸ (include LCD monitor)   70.9"(L) x 47.2"(W) x 65.0"(H)
- ▸ Shipping dimension: 227cm(L) x 165cm(W) x 205cm(H)
- ▸ (without options)   89.4"(L) x 65.0"(W) x 80.7"(H)
- ▸ Net Weight: 1028kg (467.3 lbs.)
- ▸ Shipping Weight: 1328kg (603.6 lbs.)

• Position recognition system •

- ▸ X-Y drive system: Servo motor drive system
- ▸ X axes resolution: 0.003mm
- ▸ Y axes resolution: 0.003mm
- ▸ X-Y axes repeatability: 0.030mm
- ▸ X-axis maximum velocity: 1600mm/sec
- ▸ Y-axis maximum velocity: 1600mm/sec
- ▸ Z-theta drive system: Servo motor
- ▸ Z axis resolution: 0.001mm
- ▸ Z axis repeatability: 0.030mm
- ▸ Z axis maximum velocity: 300mm/sec

• Alignment System •

- ▸ CCD FOV: 35mm x 35mm
- ▸ Mechanical Precisor: 30mm x 30mm x 4 precisors

• Programming System •

- ▸ Programming sites: 9 sites
- ▸ Programming sockets: 1, 2 or 4 per site
- ▸ Devices supported: EPROM, EEPROM, Flash,PLD, CPLD,FPGA , Micro-controllers, Anti-Fuse, and more.
- ▸ Packages supported: PLCC, TSOP, TSSOP, TQFP, PQFP, SOIC, SSOP, µBGA, CSP and more.
- ▸ Model H9800 RAM Buffer: 16 Gbits default
- ▸ Communications: USB 2.0

• System Software •

- ▸ GUI: Windows-based HMI
- ▸ OS: Microsoft® XP Professional

• Operating Requirements •

- ▸ Input voltage: 220 VAC, Single phase, 3-wires.
- ▸ Input line frequency: 50/60 Hz
- ▸ Power consumption: 2.5 KVA
- ▸ Air pressure: 75 to 95 PSI (0.4 to 0.6Mpa)
- ▸ Air flow: 160 liters/min (Peak)
- ▸ Operation temperature range: 15° to 30°C (59°-86°F)
- ▸ Relative humidity: 35-90%

• Optional Subsystems •

- ▸ Tape In / Out: 8mm to 56mm
- ▸ Tube In /Out: SOIC8 to PLCC84
- ▸ Tray In / Out: JEDEC trays up to 20 plates
- ▸ Label Feeder: Hover Davis
- ▸ Laser Marker: CO_2 (10W)
- ▸ 3DX Lead Inspection: 45mm x 45mm

• Regulatory Compliance •

- ▸ CE Compliant
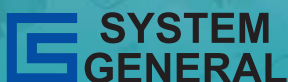
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