

## One of the Fastest Programming Systems Ever Built



**USB 2.0  
Interface**

### Product Highlights

- 112 powerful universal pin drivers (extendable to 448 pin drivers for custom programming and testing applications)
- Built-in 8192-Mbit RAM buffer (expandable to 16,384 Mbits)
- USB 2.0 port for high-speed data transmission
- Supports 1.2V Vcc Green devices
- Multi-linkable for gang programming
- Asynchronous or concurrent operation for pipelined throughput
- Windows software with job control functions
- Graphical real-time statistical display
- Online automatic failure-cause analyses
- Supports NAND-gate Flash gang programming
- ISO 9001 certified
- CE approved and RoHS compliant

# One of the Fastest Programmers Ever Built

- In 1998, System General was the first programmer company to pioneer High-Speed Programming (HSP) technology for Flash memories. Since its introduction, HSP has set the standard for the rest of the industry. Evolving from proven HSP technology, the new 9800 programmer supports virtually every type of programmable device currently available. It can program a Spansion 128-Mbit Flash memory in only 37 seconds. It is internally 10 times faster than its predecessor. So, when Flash semiconductor programming technology improves, System General will be prepared to help customers take full advantage.

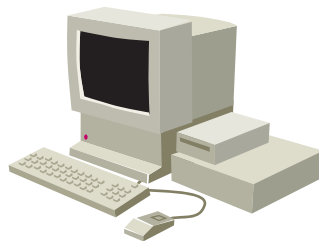


H9800

## Rapid File Downloads

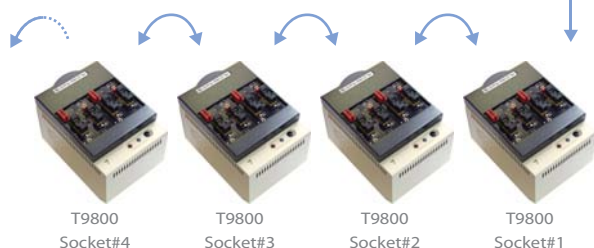
A high-speed programmer requires equally high-speed file downloads to avoid bottlenecks. The 9800 can download files from a PC at 22 megabits per second thanks to its USB interface. A 64-Mbit file downloads in around 3 seconds. The versatile "Plug-n-Play" USB feature allows the user to easily swap different system configurations.

To optimize programming throughput, the Model 9800 emphasizes maximum flexibility. A single system with multiple sites can easily be split into two or more separate systems.



High-speed data download

Download 64 Mbits is around 3 seconds



## Available for Manual and Automated Production

The model 9800 is available in two configurations. The T9800 table-top model is designed for manual programming, while the H9800 version performs handler interfacing.

On the T9800, engineers can use the password protected Engineer mode and the Task Manager software to program the first article. The programming conditions and parameters used for the first article are then saved as a specific task file. Once the first article passes certification in the target system, the saved task file can bring up the same programming setup on a T9800 for manual programming, or on another H9800 using any System General automatic handler. In order to minimize human error, the 9800 can be run in high-security Operator mode.

Programming times

(All times represented in seconds)

Device	Blank Check	Program	Verify
<b>NAND Flash</b>			
Samsung K9F5608U0C	23.0	29.8	41.0
<b>NOR Flash</b>			
Spansion S29GL128Px	13.3	37.1	13.3
Spansion S29GL256Px	25.7	73.2	25.7
Spansion S29GL512Px	50.7	148.5	50.7
<b>Serial Interface Flash</b>			
EON 25F16	3.5	12.5	3.5
Numonyx 25F320S33	9.6	20.1	9.4
MXIC 25L6405D	17.1	33.1	17.1
MXIC 25L12805D	32.8	68.4	36.3

## The New N4 Socket Board for T9800 – Designed to Maximize Your Programming Throughput

As memory densities within electronic products continue to trend up, the device programming industry reaffirms its need for faster programming performance. The N4 socket board with four sites is System General's solution to maintain a high programming throughput for these devices.

Initially designed to support NAND Flash with known bad sectors, the programming circuits of each site on the N4 socket board are isolated from one another. This allows the T9800 programming system to output four devices, each with their own data pattern, simultaneously.

Additionally, the isolated programming-site design of our new N4 socket board dramatically increases the serialization throughput for memory devices. Coupled with our proprietary mapping technology, the N4 socket board can program, with minimum software overhead, four devices each with unique serial codes.

The improved pin drivers in our T9800 programming system allow it to take advantage of the NAND Fast Access Mode, slashing programming times by up to 40%. Combined with a N4 socket board, NAND programming throughput improves by nearly 6X.

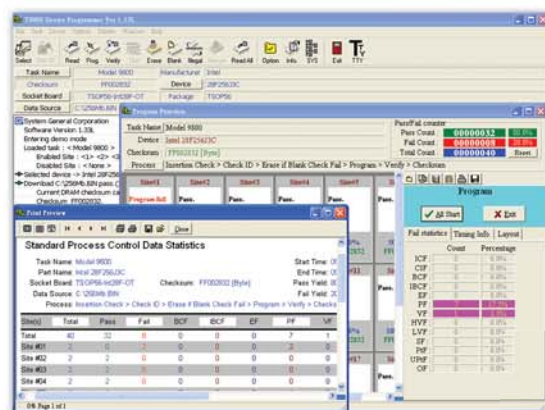
## Covering Today's and Tomorrow's Device Technologies

When investing in a device programmer, the purchase should not only fit current programming needs, but also anticipate future device technologies. The new model 9800 is designed to meet these requirements. Its system Vcc can be set to as low as 1.2 Volts to program the next-generation of Green devices. Its powerful array of 112 analog pin drivers supports different pin definitions for each socket adapter. This can substantially reduce change-overs. With the add-on EPD adapter, you can extend the array of pin drivers to 448, to support CPLD functional testing. The 9800's current sensing capabilities are precise enough even to enable antifuse device programming. Furthermore, the 9800's asynchronous (ie, concurrent) approach starts device programming in each socket upon device insertion. The 9800 combines maximum operating efficiency with pipelined throughput.

## More than a Programming Workstation

At System General, we are aware of the need to test programmed devices before they reach board level. Reworking rejects is prohibitively expensive. For logic devices, the 9800 supports vector tests with user-defined DC parameters for up to 448 pins. For memory devices, margin testing can ensure that the programmed memory will operate within a valid voltage range. Engineers can use margin testing as a powerful QC tool to find and eliminate potential rejects. Margin testing can also be used to pinpoint high and low margins.

The USB-enabled 9800 control and algorithm software works with Windows 2000/XP. Tasks can be saved in one location, and used at another location.



# T9800

Universal Programming System

## Specifications

### • General Specifications •

- ▶ Product Description..... Asynchronous universal programming system supporting all device types including EPROM, EEPROM, Flash, microcontroller, PLD, CPLD, FPGA, and many others
- ▶ Module Multi-Link..... Up to 20 sites
- ▶ Number of Sockets per Module..... 1 (expandable to 2, 4 or 8 sockets for memory devices)
- ▶ Sync/Async Execution..... Yes
- ▶ Universal Pin-Drivers..... 112 Pins
- ▶ Pin-Drivers..... VCCP, VPP, VPE, VPS, VIH, VIL, ZH, ZL, Gnd (range: 0 ~ 21.0V)
- ▶ Test Pin Extension..... Up to 336 pins
- ▶ Hi-Voltage DAC..... 3 sets (all current-mode)
- ▶ RAM Buffer..... 8192 Mbits standard (expandable to 16384 Mbits)
- ▶ Communication Interface..... USB 2.0 (USB requires Windows 2000/XP)

### • Functional Specifications •

- ▶ Vector testing..... Yes
- ▶ Margin testing..... Yes
- ▶ VOH/VOL testing..... Yes
- ▶ EPROM auto identify..... Yes
- ▶ Block Erase/Program (available soon)..... Yes
- ▶ Split/Set programming..... Yes
- ▶ Range programming..... Yes
- ▶ Verify with list (compare) (available soon)..... Yes
- ▶ Auto-Sensing..... Yes
- ▶ ID checking..... Yes
- ▶ Insertion check ..... Yes
- ▶ Pin continuity check..... Yes
- ▶ Serial code programming..... Yes
- ▶ Universal socket board..... Yes
- ▶ STAPL/JAM support..... Yes
- ▶ Green device support..... 1.2V
- ▶ Antifuse programming..... Yes
- ▶ Memory edit..... Yes
- ▶ Special bit edit..... Yes
- ▶ Programming parameter edit..... Yes
- ▶ Checksum method..... Byte, Word, CRC16, CRC32
- ▶ Job Manager/Operator-Mode..... Yes
- ▶ File format..... Intel Hex, Microchip INHX, Tektronix Hex, Motorola S, Signetics Hex, Extended Tekhex, HP 64000 Absolute, Spectrum, TI SDSMAC, ASCII Hex, ASCII Oct, ASCII Binary, Formatted Binary, Binary, JEDEC, POF, DIO, JAM, STAPL, and LOF

### • Physical Specifications •

- ▶ Dimensions..... 20.0 x 14.5 x 10.3 cm
- ▶ Shipping dimensions..... 37.5 x 17.0 x 26.0 cm
- ▶ Weight..... 2.40 kg (5.33 lbs)
- ▶ Shipping weight..... 3.53 kg (7.84 lbs)

### • Electrical Requirements •

- ▶ Operating voltage..... 100-240 VACu
- ▶ Frequency range..... 50/60 Hz
- ▶ Power consumption..... 40 VA max

### • PC System Requirements •

- ▶ Operating system..... Windows 2000/XP
- ▶ Processor..... Pentium 4 or above
- ▶ Free disk space..... 3GB recommended
- ▶ DRAM..... 512MB recommended
- ▶ Communication..... USB 2.0 recommended

### • Environmental Requirements •

- ▶ Operating temperature..... 5-45°C
- ▶ Operating humidity..... 90% non-condensing

### • Standard Accessories •

- ▶ Power cord
- ▶ Power connection cable
- ▶ System software CD (on-line help and tutorial)
- ▶ USB cable



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