

Press Release

The T100X- the pen PC comes of age

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With the announcement today in France, Germany and the United Kingdom of the Dynapad T100X pen computer, Toshiba, the world's leader in mobile PCs has underlined its belief that the pen PC has now come of age. Just as it took several years in the early 1980's before mobile computers became legitimate computing devices, so, Toshiba argues, early versions of pen PCs have only been forerunners. The T100X overcomes the shortcomings of the first pen generation and promises to be a truly useful productivity tool in areas yet untouched by computers.

The design of the T100X brings this notepad PC close to the format of a handy "electronic clipboard". Weighing just 1.5 kg (3.3 lb.), it is light enough to carry far and often and slim enough to hold comfortably in one hand. It is B5 size in format, slightly smaller than the standard A4 but still large enough to have a full-sized 9.5 inch diagonal screen. Its slimness (it is only 4 cm thick) and its rounded edges and corners, designed to fit snugly into the curves of the human hand, make it easy to carry.

Despite these measurements, the T100X still packs power inside its small frame. The heart is a microprocessor from Advanced Micro Devices, Inc., the 3.3-volt Am386SXLV running at 25 MHz. 4 MB of memory are standard with expansion options up to 20 MB. There is no internal floppy disk drive but an external 3.5-inch drive comes standard. For data storage the T100X uses the latest in miniature hard disks, a 1.8 inch 40 MB hard disk with 18 ms average access time.

The T100X scores strongly with its easy to read screen. The improvement over previous pen PC offerings is comparable to the progress the T1100, the Toshiba computer that sparked the mobile

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computing market in 1985, demonstrated compared to its predecessors. With side-lighting the screen has good legibility, and contrast and brightness can be varied using the electronic pen with the "hot spot" controls built directly into the screen frame. The transreflective technology means that you can switch off the back-lighting in bright daylight or strongly lit rooms to save battery power. Full readability is ensured by the screen using the light around it to improve the contrast.

On a pen PC, the screen is the input and well as the output medium. This is achieved through the use of a digitiser, comparable to touch screen technologies used by banks. The digitiser reacts to signals from the pen which appear as "electronic ink" on the screen. The digitiser on the T100X is a highly sensitive piece of electronics with a resolution of 254 points per inch. That means it can differ between 10 different points within 1 mm. The digitiser speed is 200 points per second.

Another important aspect of pen computing is the ease of use of the stylus. The Toshiba pen is slim and not too heavy, yet it is an "intelligent" pen. It needs no cable contact to the PC itself due to an internal transmitter. It has its own power supply in four small hearing-aid-style batteries and its own PenPower auto-off system. The pen notices when it is not in use and measures how long this lasts. After one minute of non-use it switches its power off itself. Provided you don't stand the pen on its tip (the sensitive part), there's therefore no danger of (accidentally) exhausting the batteries.

Of course such clever built-in power saving features in the pen shouldn't be any surprise given Toshiba's reputation for power saving on its notebook PCs. Indeed all the usual features such as MaxTime™ Power Management, and AutoResume are built into the T100X PC as well. Together with its Nickel Hydride batteries (two come standard), the T100X can therefore run up to five hours between charges.

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In keeping with its modern, sleek style, the T100X uses the latest in slim-line expansion, the PCMCIA 2.0 standard. Two expansion slots in this credit-card format are built into the top of the T100X, offering the opportunity, for instance, of connecting to a network in the office and to have a modem for communications outside the office. In addition there is a Toshiba standard memory expansion slot to take 4, 6 and 16 MB cards so that the PCMCIA slots are always free.

The PCMCIA slots are supported by Award Software Inc.'s card support software which comes bundled with the system. Direct connections to other peripherals are possible via the standard serial and the special parallel ports that are situated under a flap on the side of the T100X. The parallel port is a miniaturised version of the standard Toshiba/Centronics compatible port. A cable with the miniaturised socket on one end and the standard D25 connection on the other is included with the PC. For die-hard keyboard users a standard PS/2 compatible keyboard port is also included.

Although for most users the richly featured standard product will suffice, there is a whole array of options available for the T100X. Interesting options include a carry case, a stand for desk use, as well as an external lightweight notebook format keyboard. With the two latter options the pen PC quickly becomes a small desktop system. Even better security can be achieved with a Kensington Security Cable and lock. Memory expansion cards, extra mains adaptors, batteries and pens are also available as options. With more batteries you may then need the optional external recharger.

A major plus for companies considering a move to pen computing is that the T100X can be ordered with either Microsoft's Windows for Pen Computing or Go Corp.'s PenPoint operating system. For firms

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implementing a "Windows only" software policy, that means that the T100X fits directly into their strategy and there will be no problems with data exchange between office networks and external staff. For those who want to exploit the varied and fast developing pen-centric PC options, Go Corp.'s system was specifically developed for pen technology. It offers a wide range of special pen features which many software developers find especially useful. Software developers are currently developing vertical solutions for individual companies using both operating systems.

The Dynapad T100X pen computer will represent a substantial change in the way mobile workers perform in their day-to-day tasks, giving them a more flexible tool for increasing their efficiency and productivity. Toshiba foresees applications primarily in areas such as:

- * Health care
- * Market research
- * Insurance adjusting
- * Property inspection
- * Inventory management
- * Field service and sales
- * Transportation with packaged goods
- * Public sector, i.e. utilities, police, fire
- * POS management

All of these are areas in which mobile professionals without a permanent workplace frequently collect data on pre-defined forms. Benefits of this type of data collection include faster collection and distribution of information, current records, reduced rate of transcription errors , faster ordering and more integrated communications.

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Specifications

Processor

- AMD Am386SXLV
- 3.3-volt technology
- 25 MHz clock speed

Memory

- Standard 4 MB RAM
- Up to 20 MB*

Hard Disk

- 40 MB
- 18 ms ave access time
- 1.8 inch version

External Diskette Drive

- 3.5" 1.44 MB/720 KB diskette drive
- Media-type checking

Display

- 640 x 480 dot resolution
- Transreflective
- B&W STN LCD
- 9.5" diagonal

Graphics Adaptor

- VGA compatible
- Up to 16 grey shades

Pen System

- Cableless active pen
- PenPower Auto-off

Screen Digitiser

- 0.1 mm resolution
- 200 points/sec.
- Built-in contrast and brightness controls

Interfaces

- Centronics compatible parallel/FDD port
- RS-232 serial port
- PS/2 keyboard port

Special Features

- AutoResume™ Mode
- MaxTime™ Power Management
- Advanced Power Management
- Power-on password
- Flash Eprom BIOS

Expansion

- Credit card format memory expansion
- 2 PCMCIA 2.0 slots

Power Supply

- Autosensing 100-240 V AC adaptor for world-wide usage

Batteries

- 2 Rechargeable and removable NiCd units
- 2-3 hours battery life
- Recharges in 1.5 hrs

Size

- 270 x 210 x 39 mm (10.6" x 8.3" x 1.5")

Weight

- 1.5 kg (3.3 lb)

Software

- MS-DOS 5.0 with MS Windows for Pen PCs **or**
- Go Corp.'s PenPoint

Options

- Carrying case
- Desk stand for PC + diskette drive
- Extra battery packs
- Battery charge
- 4, 6 and 16 MB* memory cards
- External lightweight notebook keyboard
- Toshiba ExpressWriter 201 portable printer

* 16 MB cards available in mid 1993