OVERVIEW

The **TS-7800** is a **RoHS** compliant Single Board Computer (**SBC**) based on a Marvell **500MHz ARM9** CPU with internal **PCI** bus and that provides a standard set of on-board peripherals such as **Gigabit** Ethernet, dual SATA and dual High-Speed host/slave USB 2.0.
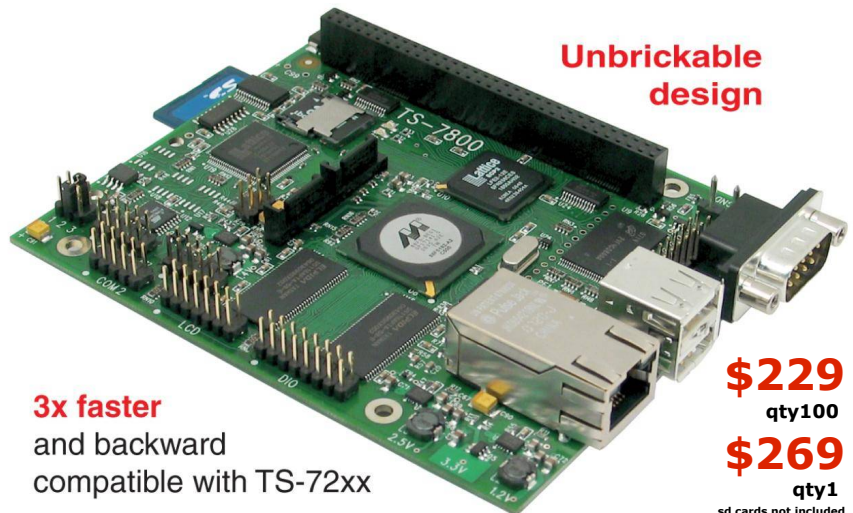
The TS-7800 also features a 12,000 LUT on-board Lattice **FPGA** which is programmable via Linux software and provides extra peripherals such as **110 GPIO** lines and additional serial ports.

On the software side, the TS-7800 uses an in-house improved **Linux 2.6** Kernel that allows **0.69 second** bootup and provides driver support for all on-board hardware. In addition, the **512 MB on-board Flash** enables a full **Debian** distribution to be installed with a complete embedded development environment.

The TS-7800 is backward **compatible** with our TS-72xx computers, providing **3 times** more performance and higher-end features with identical footprint, thus allowing quick platform migration for customer applications.

Unbrickable design

3x faster
and backward
compatible with TS-72xx

$229
qty100

$269
qty1
sd cards not included

FEATURES

- **500Mhz** ARM9 CPU
- Internal **PCI** bus, PC/104 connector
- 12,000 LUT programmable **FPGA**
- 128MB DDR-RAM
- **512MB** NAND Flash, high-speed (17MB/s)
- 2 SD socket (1 micro-SD, 1 full-size SD)
- 2 SATA ports
- 2 USB 2.0 **480Mbps** host/slave ports
- **Gigabit** Ethernet, 10/100/1000 speeds
- 5 10-bit ADC channels
- 10 serial ports, 2 optional RS-485
- **110 GPIO** (86 arranged as a PC/104 bus)
- Sealed-battery backed RTC
- Matrix **Keypad** and Alphanumeric **LCD** interfaces
- **Fanless**: -20° to +70°C
- Optional on-board Temperature Sensor
- Low power **4W@5V**
- Sleep mode uses **200 microamps**
- Optional **8-30V input** voltage range (default is 5V)
- Boots to a Linux shell-prompt in **0.69 second**
- runs **Kernel 2.6** and Debian Linux by default

FAST BOOTUP FIRMWARE

The TS-7800 bootstrap uses a unique and clever combination of FPGA hardware logic, specific boot-up firmware and Kernel tweaks which ensure fast boot time, security, high board recoverability and more:

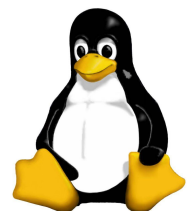- **Linux-based bootloader** boots Linux 2.6 kernel to shell-prompt in **less than 1 second** after power-on from either SD card or on-board Flash
- Full Debian can be installed into on-board Flash from a USB flash dongle - no need for Busybox
- **Unbrickable** design ensures 100% recoverability from SD card in case of on-board Flash erasure

12,000 LUT FPGA

- Connects to CPU via 50Mhz local **PCI** bus
- Default load uses GPIO pins as a PC/104 bus
- Enables fast board modification or feature improvement via FPGA load customization

LINUX 2.6 AND DEBIAN

The TS-7800 is shipped with Linux Kernel 2.6 and the Debian distribution on on-board **Flash**, enabling a wide range of server services, desktop-like applications and developments tools to run on a **embedded real-time** system.

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We have been in business over 20 years!

We've built our business on **excellent products, low prices and exceptional support**. We sell a wide variety of off-the-shelf PC/104 SBC's and peripherals, and offer custom configurations and designs with excellent pricing and turn around time.

Technologic Systems has never discontinued a product. You can count on long term availability when you include our SBC's and peripherals in your design.