

Teacube/VR5701 Evaluation Kit

Mini-appliance of T-Engine for embedded computers



Teacube/VR5701 Evaluation kit (in full-scale)

If you have any questions, please feel free to contact us.
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Teacube

Overview

The kiosk terminals seen in railway stations, the guidance terminals found in digital museums and elsewhere, and many other kinds of information display terminals - like those used to show video ads, weather information, and transportation information - are generally based on personal computer architecture.

Using a PC for these systems, however, has several disadvantages. When a general-purpose OS is used, for example, it may be open to hacking or malicious use, stability can be a problem, replacement parts may not be available after a time, and the system may not always recover properly from a crash.

In locations where embedded systems are used, the system is often subjected to harsh use conditions, such as having a user suddenly shut off the power by mistake. Even in such cases, however, an embedded system can be expected to operate normally upon being restarted, as if nothing had happened.

Teacube was developed for just such situations. It is designed for use as an embedded computer under tough conditions, to operate stably for long periods on end, and to consume very little power, making it environmentally friendly.

What is Teacube?

Teacube is built on the T-Engine/Vr5701 Development Kit, a standard T-Engine development kit sold by Personal Media.

The CPU in the development kit is the Vr5701A, developed by NEC Electronics based on the MIPS architecture. When operated at 400MHz, it delivers high processing performance of 800MIPS.

Typical power consumption when running at 266MHz is a mere 6.5W. This is a small fraction of the power used when an ordinary PC is operated along with peripheral devices.

Teacube was originally designed and developed as an embedded computer for control use. As such, it even has an RS-232C interface, which has become a rarity in PCs these days but can be useful in applications where signals are to be watched.

By using compact flash for storage in place of a hard disk, it can be made more durable against faults or vibration. The compact size, moreover, offers more freedom in designing the end product, such as a kiosk terminal.

PRODUCT Makeup

Hardware specification



CPU	NEC Electronics Vr5701A (MIPS core, 266/333MHz)
Flash Memory	16 MB
SDRAM	64 MB
I/F	USB x 2, RS-232C(serial) x 2, Compact Flash (IDE), 100Base-TX, external CRT output (max. 1280 x 1024 dots, 65536 colors), eTRON, microphone input, headphone output, JTAG
Power Supply	AC adapter
Others	RTC
Size	52 x 52 x 45 mm (height) 2.047 x 2.047 x 1.772 inch (height)
Weight	165g (5.82 oz., including the case)

Software specification

OS and middleware

PMC T-Monitor, PMC T-Kernel, PMC T-Kernel Extension, PMC T-Shell

Basic applications

Basic Browser (to browse WWW on Internet),
Basic Text Editor, Basic Figure Editor, MicroScript (a visual language), System Configuration, User Configuration, Network Configuration

Reference Books and Related Information

- T-Kernel Kumikomi Programing Kyokasho (A Practical Guide to T-Kernel Embedded Programing), Ken Sakamura (Ed.), 4200yen.
- T-Kernel Standard Handbook, Ken Sakamura (Ed.), 3800yen.
* English documents are included as PDF files on CD-ROM.
- T-Engine, T-Engine2, T-Engine3 (TRONWARE extra edition), 1600yen (each).
- TRONWARE Vol.1-109 (TRON bimonthly magazine, scheduled to be continued),1200yen (ordinary issue).
- μITRON 4.0 Standard Guidebook, Ken Sakamura (Ed.), 3200yen.
- * The above books are published by Personal Media Corporation in Japanese. Tax is not included.
- T-Engine Forum <http://www.t-engine.org/>
- TRON Project <http://www.tron.org/>
- Personal Media Corporation (T-Engine Solution Website) <http://www.t-engine4u.com/en/index.html>

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- eTRON is an abbreviation of "entity and economy TRON".
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