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RABBIT eNews

Headlines

Customer Applications

Since its introduction in late 1999, the Rabbit 2000™ microprocessor has become the engine behind a wide range of real-world applications. We collect examples of how embedded system designers put the Rabbit 2000's streamlined architecture and array of powerful features to work. We are pleased to present these innovative customer applications, both to applaud the designers and to help inspire other designs.
Send us your company's Rabbit-based application story (see contact information on page 4).

Congratulations Tidal Engineering!

Test & Measurement World Magazine has named Tidal Engineering's VersaTenn V touch panel control system one of the best new Test & Measurement products of the year. It is one of only twelve products selected by the editors of T&MW and is in the running for the Best Test Product of the year.

"This is our second 'Best in Test' award in three years," says Craig Borax, engineering manager of Tidal Engineering. "And we're proud to say that Rabbit Semiconductor has played a big part in our success in both cases."

The VersaTenn V, developed by Tidal Engineering for Tenney Environmental, uses the Rabbit 2000 microprocessor for its Olympic Processor, the VersaTenn's input/ output controller. Tidal Engineering chose the Rabbit 2000 because the main goal for the controller was to off-load most of the input and output, a strength of the Rabbit 2000. This, combined with its powerful capabilities and the low cost, made the Rabbit "a dream come true," according to Mr. Borax.

With Ethernet, IEEE 488, RS-232 and RS-485 interfaces, the VersaTenn V is a truly connected device. Developed using Tidal's Windows CE Embedded Control Framework (ThEChieF) and incorporating the new patent-pending WebTouch™ Remote, it offers a host of features previously unavailable on environmental chambers including:

- Ethernet and Web-based remote control and monitoring
- Built-in data acquisition (up to 64 channels)
- Windows CE-based touch screen supporting multiple languages
- Powerful on-line setup Wizards

The VersaTenn V controller incorporates the capabilities to take environmental testing into the 21st century and beyond.

For more information visit www.tidaleng.com

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Product Spotlight

Dynamic C® 7.03

Dynamic C 7.03 includes all the features of previous versions of Dynamic C plus key enhancements pertaining to TCP/IP, error handling, the compiler, the user interface, the flash file system, and more.

Key Enhancements of 7.03 include:

- Remote debug capability over Ethernet/Internet when combined with the RabbitLink™ card
- Point-to-Point Protocol (PPP)
- Improved memory usage by the TCP/IP stack and the BIOS
- Web server that automatically generates and parses forms
- Targetless compilation
- Faster, smaller generated code
- "Tip of the Day" interface feature
- Flash file system for boards with a second flash
- More sample programs
- Bug fixes

By purchasing Dynamic C Premier 7.03 for just $295.00 you will not only benefit from the latest features, but you will receive FREE software upgrades for one year. As our valued customer you'll also have access to what we believe is the best technical support in the industry, at no additional cost.

The RabbitLink™ Card

The RabbitLink card is an easy-to-use remote interface that programs and debugs Rabbit-based boards over networks and the Internet. Now users can conveniently access and program Rabbit-based systems whether from their desk or across the world via a high-bandwidth Ethernet-based connection.

When attached to the Ethernet and a Rabbit microprocessor-based system, the RabbitLink allows users to compile, run, and debug programs on the remote system from a network-connected PC running Dynamic C® Premier 7.03. This easy-to-use card adds the powerful capability of remote access to any Rabbit-based microprocessor system over most networks or the Internet, greatly enhancing the appeal of products based on the Rabbit 2000™ microprocessor. The RabbitLink card features: 22.118 MHz Rabbit 2000 Processor, 10baseT Ethernet interface, 512K flash (2x256K), 128K SRAM, and pre-loaded software.

In addition it can also be used to provide a portal to the Internet, enabling the system to send e-mail or generate web pages via a simplified protocol with the software resident on the RabbitLink. This versatile product is available for only $129.00.

Announcements

Visit us at the Embedded Systems Conference in San Francisco Moscone Convention Center, April 9–13, Booth #842

Rabbit Semiconductor technical experts will present an intermediate/advanced TCP/IP seminar at the 2001 Embedded Systems Conference.

The Embedded Systems Conference is dedicated to providing engineers, developers, and project managers with practical information from high caliber instructors in the embedded industry. This year's intermediate/advanced class, "Familiarity with TCP/IP Networking" will be presented on April 12, by Rabbit Semiconductor software engineers Joel Baumert and Gene Fodor. TCP/IP has become a common interface to many embedded controllers. This class covers the design trade-offs when developing a remote downloading and debugging architecture for mid-to-low-cost embedded controllers and addresses speed, reliability, and security.

Joel Baumert is the lead engineer for TCP/IP software development at Rabbit Semiconductor and has earned his BSCS from the University of California, Davis.

Gene Fodor is the lead compiler engineer at Rabbit Semiconductor and has earned his MSCS from the University of California, Davis.

Rabbit Semiconductor will feature on-going TCP/IP demonstrations and showcase other product innovations in booth #842. Please stop by to say hello.

EmbeddedSystems Conference San Francisco

April 9 – 13, 2001 • Moscone Center • South Hall

Tech Tips

Dynamic C Users Can Change TCP/IP Addresses Dynamically

Normally, DCRTCP.LIB can be configured at compile time manually through macros. At runtime, you can use tcp_config. The macros (#define MY_IP_ADDRESS etc.) control the default values for the IP address, netmask, default gateway and name server.

When you want to change a value at runtime, you can use the tcp_config function, which takes two strings. The first string is the setting to be changed and the second string is the value to change it to. You should use this function to change any values after calling sock_init. The configuration macros can all be overridden by this function.

```
ex: tcp_config ("MY_IP_ADDRESS", "10.10.6.101");
```

Some of the tcp_config functionality is duplicated by other Dynamic C TCP/IP functions. The tcp_config function can set the MY_HOSTNAME, and the set-hostname function can serve the same purpose. Following is a simple example:

```
#define MY_IP_ADDRESS "10.10.6.30"
#define MY_NETMASK "255.255.255.0"
#define MY_GATEWAY "10.10.6.19"
#memmap xmem
#use dcrtcp.lib
main()
{     char ip[2][20];
        int a;
     sock_init();
     strcpy(ip[0], "10.10.6.20");
     strcpy(ip[1], "10.10.6.30");
     printf("Hit any key to change IP address\n\n");
     a = 0;
     printf("MY_IP_ADDRESS = %s\r", ip[a]);
     for (;;)
     {     tcp_tick(NULL);
           if( kbhit() )
           {     getchar();
        a = a ? 0 : 1;
        if(a) tcp_config("MY_IP_ADDRESS", "10.10.6.30");
        else tcp_config("MY_IP_ADDRESS", "10.10.6.20");
        printf("MY_IP_ADDRESS = %s\r", ip[a]);
           }
     }
}
```

Thank You

Rabbit Semiconductor Tops Competitors in "Embedded Systems Programming 2000 Subscriber Study"

According to a survey of readers taken by *Embedded Systems Programming* magazine, the Rabbit 2000™ microprocessor has achieved an amazingly high ranking compared to other more established 8-bit microprocessors. The Rabbit 2000 was introduced only 10 months before the magazine's survey, yet it gained the nod from 20 percent of the survey respondents as being one of the 8-bit microprocessors that they would consider using for their design projects. The Rabbit out-scored such processors as the Hitachi H8 (14.2 percent) and the Dallas 80xx and 80Cxx families (17.4 percent). The Rabbit came within a whisker of out-scoring the combined Zilog Z8, Z80 ad Z180 families (20 percent of respondents for the Rabbit compared to 20.5 percent for the Zilog families).

"The 'Embedded Systems Programming 2000 Subscriber Study' is one of the most comprehensive and detailed studies on the embedded systems market," says Eric Berg, publisher *Embedded Systems Programming*. "The 153 questions cover market share for MPUs, MCUs, DSPs, memory, logic, software development tools, hardware development tools and boards, as well as design trends, purchasing factors and time-to-market issues. The data is invaluable for measuring your company's share of market and mind, evaluating new technologies or product capabilities, and choosing partners in the fast-paced embedded technology arena."

Rabbit Semiconductor is proud to have been a part of the "Embedded Systems Programming 2000 Subscriber Study" and thanks the readers for their participation and continued support.

Source: Embedded Systems Programming, Survey of Subscribers Preliminary Report, September 2000

Customer Applications

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Biometric Access Corporation (BAC) is a full service biometric company providing complete hardware and software solutions that incorporate the Rabbit 2000 into their award-winning SecureTouch™ fingerprint authentication products. BAC designs, develops, manufactures and markets fingerprint capture hardware, fingerprint matching software and several applications that utilize these products to provide complete user solutions. The SecureTouch line includes a family of products targeted at the retail, healthcare and computer/network security industries.

For more information visit www.biometricaccess.com

Darby Corporate Solutions, Inc. (DCS) is a New York-based wireless communications firm specializing in the development and deployment of wireless communications business solutions, connecting mobile workers to the critical information they need to maximize productivity and remain competitive. The Diplomat 2000 and Diplomat Express' premier application is an integrated hardware and software Vehicle Location Service (VLS) that tracks, monitors and helps manage your company's vehicles, fleet and mobile assets.

"With four internal serial ports, a large number of parallel I/O lines and low power operation, the Rabbit Semiconductor processor is a good fit on the Diplomat Express communication platform. Other features such as a low power 'sleepy' mode where the processor continues to execute were important requirements for the Diplomat Express," explains DCS Engineering.

For more information visit www.dcs.com

Logosol, Inc. designs and manufactures state-of-the-art motion control components and systems featuring high level integration, exceptional reliability, software sophistication and unmatched versatility. Logosol's highly experienced development team specializes in providing cost-effective custom turnkey products and solutions such as Servo Amplifiers, Motion Controllers, Distributed Automation, Stand-Alone Controllers, Servo Boards, and Servo Systems.

"The most important piece is the Rabbit 2000 Core with Dynamic C® software. It allows multiple servo, stepper and digital I/O modules to be controlled by a single master with a variety of interface options such as serial, parallel, TCP/IP, etc.," says Dr. Lubo Kostov, President of Logosol, Inc.

For more information visit www.logosolinc.com

If you'd like to see your product innovations showcased in Rabbit eNews, we encourage you to submit your company's application story to press@rabbitsemiconductor.com. ■

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