

Focused on a highly specific product or application area, the **Technology Update** package gives sponsors **three ways** to get its message across to design engineers:

TECHNOLOGY UPDATE
Evaluation kits provide FPGA design head start
The kits provide a pre-engineered, ready-to-use platform to allow designers to begin work immediately on their own logic designs

By MICHAEL J. KAWA

Designers of FPGA applications can save time and money by using evaluation kits during initial design and development. These kits provide an easy-to-use low-cost platform for designers to experiment and prototype logic designs based on a targeted FPGA family. They allow quick access to FPGA architecture, and permit exploration of device capabilities and configurations. Kits range from entry-level models for general-purpose logic design to advanced units using higher-density FPGAs targeted for specific applications. Each kit contains the same basic components to get designers started right out of the box: an evaluation board, design software, support documentation, reference designs, and a power supply.

of FPGA technology and provide product differentiation in a quicker design cycle.

Keeping up with FPGAs
FPGAs continue to revolutionize the way system designers implement logic. With unprecedented increases in logic density and bandwidth, these devices offer an enormous level of design flexibility and performance, allowing them to be used in almost any logic design application. This has prompted the mass migration of logic hardware to the programmable domain, which has transformed how hardware is developed.

The technology is setting new standards for viable and cost-effective logic design, extending traditional fixed logic ASICs and ASSPs. The reconfigurability of the FPGA platform allows designers to easily generate changes or upgrade designs in the field, increasing the life cycle of the end product and eliminating the need for costly hardware redesign and ASIC reprints.

FPGAs continue to evolve rapidly, sizes first being used as single "glue logic" devices. They are now key system-level components that come in packaged hard and soft core processors, reusable IP cores, block RAM memory, complete clock management, sophisticated I/O capabilities, hard-wired multiplexers, dedicated peripherals, and advanced DSP functions.

Future growth is ensured by increasing demands in emerging markets for scalable platforms and embedded system development. New devices are being developed every 18 to 24 months with numerous add-ons and feature updates appearing along the way.

Making it easier
To keep up with the frenzied pace of innovation where design cycles may last only a few months, designers are pressured to bring products to market quickly and efficiently while keeping development costs down. This can be intimidating for designers sitting in their labs facing the prospect of exploring a new design from scratch with a blank chip and an empty breadboard. It means developing a hardware platform, writing the software code to make it work, then debugging the system to verify its stability. That's a lot of engineering resources to expend before even looking at the target design.

The evaluation board contained in the kit is pre-engineered by a targeted FPGA and fully integrated by the sponsor to support and optimize the various custom features of the specific device. Development is a create a user-friendly environment so designers can gain an understanding of basic design flow and programming control.

The kit supports FPGA development by providing a pre-engineered, ready-to-use platform, allowing designers to immediately begin work on their logic design goals. They also serve as a hands-on learning tool, teaching a wide range of designers about various aspects and details of FPGA design. This allows designers to expand their use

ing FPGA design basics, walking the user through the design step by step.

More kits also come with touch-up designs.

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features

- Reference platforms and BLDC motor control
Reference platforms are powerful yet simple-to-use development tools built around leading-edge microcontrollers whose feature sets and performance characteristics are optimized for use as motor controllers. The single-board design provides fully integrated hardware and preloaded software, allowing designers a quick and easy method of implementing and developing brushless dc (BLDC) motor control.

news

- Application processors pursue multimedia
The SH-MobileLV2 (SH7302) application processor offers a large number of video formats, high-resolution video capture, and enhanced functionality to control image quality. The SH-MobileUL (SH7363) version features a small 8 x 8-mm package and provides excellent cost/performance targeting mainstream mobile phones.
- Reference platform tackles motor control
The R8C25-based brushless dc motor control reference platform allows quick adoption of the latest technology to appliances, power-tools, fans, pumps, and other products.
- Microchip Technology Announces Expansion of Motor Control
Microchip Technology Inc., a leading provider of microcontroller and analog semiconductors, today announced 10 new 28- and 44-pin 16-bit Digital Signal Controllers (DSCs) for motor control designs requiring increased memory or performance, or enhanced peripherals, while obtaining cost and size savings associated with lower pin-count devices.
- Drive handles 5-A BLDC motor without Hall sensor
The DECS 6105 controller drives brushless dc motors without Hall sensor and targets pump and fan applications. It can easily accept integrated controlling algorithms, and its wide input voltage range (10 to 50 V) adds flexibility.
- Demo platforms target 16- and 32-bit MCUs
The innovatively named Sub-Atomic Particle Boards are three demonstration platforms for the M16C, R8C, and H8 microcontrollers. They ease assessment of peripheral functions and system software development tools with a truly integrated suite of hardware and software that covers all three 16- and 32-bit processors.

articles

- Efficient motor/controls save terawatt-hours/year
Designers of appliances and control systems are simultaneously challenged with numerous inflexible targets. On top of that, they need to meet these demands in an environmentally friendly manner consistent with multiple energy policies.

sponsor products

- Scalable solutions for your motor control applications
Renesas MCUs offer the right balance between performance and cost to meet the challenges imposed on motor control for a multitude of applications.
- Industrial CAN/LIN network solutions
LIN AND CAN NETWORKING TECHNOLOGIES are excellent solutions for a wide range of industrial & Automotive embedded applications.
- R8C/Tiny Improves Efficiency and Adds Intelligence to Motor Systems
Advanced motor-tuned timers coupled with R8C/Tiny's powerful 16-bit CPU provide the performance demanded by low-end motor control applications ranging from electronic toothbrushes to networked motor arrays in industrial automation.

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- Join us at Renesas' Developer's Conference
In San Diego, October 13-15, for the 2-day inaugural event devoted to providing useful data on real and proven system solutions, and especially to debunking the myths that often stifle good ideas, degrade performance achievements, and impose unnecessary work-arounds.

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