

Time to Give Yourself a Treat

By Murray Slovick

Well, we've made it through another holiday gift-giving season. Perhaps you were lucky and Aunt Millie decided not to give you a sweater for the fourth consecutive year and tucked a \$100 gift check under your tree instead. If so, you may be looking to treat yourself to something that provides the intellectual stimulation engineers need and can be acquired for less than a C-note.

Happily, even in our gilded age of \$6 coffee concoctions and \$12 ballpark beers there's a host of affordable development kits available. These not only have more usefulness than the gizmos found at sites such as X-tremegeek.com, but they can tone up your skills and help to cement your position at work (always a good thing in these uncertain economic times).

As an example let's start with Texas Instruments' eZ430-Chronos, a complete CC430 microcontroller-based development system contained within a sports watch. A very outside of the box offering for the traditionally conservative TI, it employs the CC430F6137 <1 GHz RF SoC (transceiver and MCU) and features a 96 segment LCD display with an integrated pressure sensor and 3-axis accelerometer for motion sensitive control.

Talk about bang for the buck: Chronos is priced at \$49. You get all of the hardware and software needed to immediately begin development of wireless networking applications, regardless of your programming expertise. The integrated wireless feature allows the Chronos to act as a central hub for nearby wireless sensors such as pedometers and heart rate monitors—right out of the box! Chronos also includes a USB-RF access point for connecting to a PC as well as multiple production-ready open source projects to facilitate evaluation, design and community collaboration.

Our second example is equally useful but visually very different. As a sports watch Chronos stands out among embedded development systems in a way that a guy in an Armani suit would be conspicuous on a treadmill in your local fitness club. Freescale's Tower System, on the other hand, has an erector set stance offering a modular development platform for 8-, 16- and 32-bit microcontrollers. Comprised of three types of modules (Microcontroller, Peripheral and Elevator Modules), the Tower System enables engineers to reuse tools and rapidly prototype designs.

The TWR-MCF51CN-KIT, with a suggested price of \$99, is a complete Tower System development kit and includes the elevator module (TWR-ELEV) that provides all the power regulation and structural integrity for the complete Tower platform. The newest MCU modules for the Tower support Freescale's MCF5225X 32-bit ColdFire MCU and MC9S08LL64 8-bit MCU, the latter including an on-chip LCD driver. Freescale's TWR-MCF5225X module offers a flexible industrial connectivity solution with on-chip USB, Ethernet, CAN and

encryption, along with the Freescale MQX RTOS and associated tools and software stacks.

Another recent upgrade for the Tower system is a \$59 peripheral module (designated TWR-ZGWIFI) from ZeroG Wireless, enabling 802.11b Wi-Fi connectivity for your application. Optimized for applications with lower data rates, lower power consumption and low system resource requirements the kit includes a Wi-Fi board with the ZeroG ZG2101 Wi-Fi I/O module and antenna as well as an instructional DVD, sample applications, and software drivers to quickly integrate it into the Tower System. It enables designers to transition to an FCC-approved Wi-Fi module easily, lowering overall cost. Using the kit you should be able to run sample applications in a few hours at most.