

Design2K

Contest

Blaze a Trail for the new Millennium

3 Grand Prizes: \$5000

Second Prizes: 10 Sony VAIO
Laptop Computers

Third Prizes: 10 Philips PC External
CD-Rewritable Kits

\$1000 51LPC Bonus

for using the 51LPC in
a winning project

Submit your entry by June 30, 2000

**CIRCUIT
CELLAR**[®]
THE MAGAZINE FOR COMPUTER APPLICATIONS



PHILIPS

Let's make things better.

www.circuitcellar.com/design2K

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Design-in BONUS with a Philips 51LPC

The 51LPC family of 80C51-based microcontrollers gives you more options in designing highly integrated low-cost, low-power applications. And if you win with a 51LPC in your design, you get a \$1000 bonus!

Key Features

- **Fast execution**
 - 2× over existing 80C51 devices
 - 2.7 V to 6.0 V operating range
 - 20 MHz above 4.5 V, 10 MHz below 4.5 V
- **User-configurable oscillator**
 - Provides flexibility in user design
 - Crystal/resonator with several speed ranges
 - On-chip (no external components) RC oscillator
- **Low power**
 - 4.1 mA (3.3 V at 10 MHz, typical)
 - Idle mode: 1.5 mA (3.3 V at 10 MHz, typical)
 - Powerdown: 0.5 μA (3.5 V, typical)
- **20 mA per pin**
 - Maximum limit per port and device

Philips Semiconductors



PHILIPS

Philips Semiconductors is the world's leading supplier of the most popular 8-bit architecture, the 80C51. Offering more than 100 derivatives, Philips Semiconductors has extended this successful architecture into its low-power, small footprint, low system-cost 80C51 family—the 51LPC and its high-performance 16-bit XA family. Now, customers can preserve their software, development tools, and technology investment in the 80C51 while capitalizing on low-power, small footprint, and 16-bit performance applications.

Philips Semiconductors' innovations in digital audio, video, and mobile technology position the company as a leader in the consumer, multimedia, and wireless communications markets.

*Circuit Cellar*TM is the premier source of practical technical information for designers and builders of computer hardware and software applications. *Circuit Cellar* enhances the electronics design skills of its readers by offering creative solutions and unique applications through complete projects, practical tutorials, and useful design techniques.

Circuit Cellar is the only magazine serving the micro-computer market that is focused on the needs of hands-on designers, engineers, and programmers of microcomputer hardware and software. Articles in the pages of *Circuit Cellar* are written by engineers, for engineers. They give the reader practical information that can immediately be used to develop or improve working computer applications.

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Philips Semiconductors is solely responsible for the payment and distribution of all prizes and monetary awards. The prizes will be mailed to the winners. There will be no substitution for prizes other than as offered. Taxes are the sole responsibility of the winners. The winners agree that signing the contest entry form constitutes an affidavit of eligibility and agreement to the terms and conditions of entry as stated in the contest rules. The winners will be notified by mail, e-mail, and/or telephone on or about July 1, 2000. The judges' decision is final. If a winner fails to respond within 30 days of notification, an alternate winner will be selected. Prizes are not transferable.

Direct employees of Circuit Cellar or Philips Semiconductors, their affiliates, advertising, promotion, and production agencies, and members of their immediate families or those with whom they are domiciled are not eligible.

Entries made on the Internet will be deemed made by the authorized account holder of the e-mail address submitted at the time of entry; however, a physical signed entry form is still required for any entry to be eligible. In the event of a dispute, potential winners may be required to provide proof that the potential winner is the authorized account holder of the e-mail address associated with the potentially winning entry.

By entering, contestants release Circuit Cellar and Philips Semiconductors, its agents, and hosting service from all liability with respect to the use of the prizes awarded herein, agree to be bound by these rules, and consent to the use of their names and likeness for advertising and/or promotional and/or marketing purposes without additional compensation. Circuit Cellar and Philips Semiconductors are not responsible for incorrect or inaccurate entry of information including, but not limited to technical malfunctions, human error, lost/delayed data transmission, omission, interruption, deletion, defect, line failures of any telephone network, computer equipment, software or any combination thereof, entry materials that have been tampered with, or e-mail or mail-in entries that are illegible, late, lost, damaged, postage due, or misdirected. Circuit Cellar and Philips Semiconductors are not responsible for any injury or damage to participant's or any other person's computer related to or resulting from participation or downloading any material in this contest. Entries that have been tampered with or altered are void. Circuit Cellar and Philips Semiconductors reserve the right to cancel, terminate, modify, or suspend this contest if it becomes technically corrupted or if for any reason the Internet portion of the program is not capable of running as planned, including infections by computer virus, bugs, tampering, unauthorized intervention, fraud, technical failures, or any other causes beyond the control of Philips Semiconductors or Circuit Cellar Inc., which corrupt or affect the administration, security, fairness, integrity, or proper conduct of this promotion. This contest shall be governed by the laws of the United States.

Design2K OFFICIAL RULES

Contest

Thank you for your interest in the **Design2K Contest**, the twelfth annual *Circuit Cellar* design contest, sponsored by Philips Semiconductors. You may enter any working electronics project based on a Philips Semiconductors 51LPC microcontroller or any other Philips 80C51 microcontroller. Our goal is to encourage you to design unique applications that are useful and creative.

Design2K gives you the opportunity to show the rest of us your creative spirit. *Circuit Cellar* and Philips Semiconductors want you to demonstrate what can really be done with the 51LPC MCU. All winning designs that incorporate the 51LPC will receive a \$1000 bonus.

Innovation, simple elegance, and quality of design are key factors to success in **Design2K**. We welcome entries that range from proven to leading-edge technologies. Projects can range from the very simple to the most intricate. Keep in mind, however, that winning is not a function of complexity.

Look over the rules, circle the June 30, 2000 deadline on your calendar, and have fun designing a winner! We look forward to seeing your project. **Winners will be notified by telephone, mail, or e-mail; announced publicly at Embedded Systems Conference (September 24-28, 2000) and highlighted in the December 2000 issue of *Circuit Cellar*.**

1. Each project must be the original work and property of the person(s) who submits it.
2. Projects may be submitted in hardcopy or digital form, and must be written in English. The postal and e-mail addresses for submitting contest entries are shown at the bottom of this page. North American applicants, please follow hardcopy guidelines.

Hardcopy:

- a completed and signed entry form

- a publishable, technically descriptive abstract in Microsoft Word or ASCII text as well as hardcopy (approx. 500 words) and block diagram of the design (see examples at www.circuitcellar.com/Design2K)
- complete and legible schematics of the hardware used
- complete documentation of the project and its operation, including software, flowcharts, and diagrams where appropriate. Submit extensive software listings digitally (send four [4] copies on 3.5" disks [1 copy per judge]).
- four (4) copies of all documentation (1 copy per judge)
- four (4) identical photographs of the completed project (1 copy per judge)
- do not send the physical project unless you are notified of being a winner

Digital:

- fax or mail the completed and signed entry form. We will send you a Project Number which you MUST use to identify your project instead of your name.

- a publishable abstract in Microsoft Word or ASCII (approx. 500 words) and block diagram (in PDF or EPS format) of the design (see examples at www.circuitcellar.com/Design2K). Filename = <project number> abstract
- complete documentation of the project and its operation, including software, flowcharts, schematics, photos, and diagrams. Use PDF or Microsoft Word format only.
- source code should be left in compilable form
- do not send the physical project unless you are notified of being a winner

A contestant may enter more than one project but must submit each as a separate entry. **There should be no personal identification or corporate affiliation markings on any of the entry material. Your name, address, or corporate affiliation should appear only on the entry form. Contestants who leave their names in headers, footers, table of contents pages, schematics, etc. may be disqualified.**

3. All core hardware must be Philips Semiconductors' 51LPC MCU or other Philips 80C51 microcontroller (check the *Circuit Cellar* web site for additions or qualifications to this specification). Visit www.circuitcellar.com/Design2K for sources of databooks and downloadable compilers. Sources for development kits and individual chips are available via the *Circuit Cellar* web site or your local Philips Semiconductors sales office or distributor.

4. **All entries must be received on or before June 30, 2000.** Entries received after this deadline are deemed ineligible.

5. We encourage all contestants to seek patents for any unique or proprietary aspects of the design prior to submission. The design remains the intellectual property of the contestant. To avoid additional shipping and organizational difficulties, all copies of entry documentation become the property of *Circuit Cellar* and will not be returned.

6. Only winning projects must be shipped to *Circuit Cellar* (postal address below) for photographing. The contestant bears all responsibility for shipping and insuring to *Circuit Cellar*. We will contact you with details if you win and need to ship your project to us. Projects will be returned.

7. All contestants entering projects in **Design2K** agree to assign *Circuit Cellar* exclusive first-publication and nonexclusive full-publication rights of the project if they win any award and if *Circuit Cellar* elects to publish it. If the project is published as a separate article in *Circuit Cellar*, *Circuit Cellar Online*, or any other *Circuit Cellar* publication, the contestant will be paid standard *Circuit Cellar* Press remuneration. All contestants entering projects in **Design2K** assign to *Circuit Cellar* and Philips Semiconductors the right to publish (print or electronic/Internet media) the submitted project abstract including the block diagram.

8. **Design2K** entries will be judged on their: technical merit, originality, cost effectiveness, utility or applicability, and efficiency of development and design process. Contest judges have been chosen based on their familiarity with engineering design, component familiarity, and experience. Winners will be chosen based on all of the criteria given. All decisions made by the judges are final.

9. Philips Semiconductors will directly award all prizes. Three Grand Prizes of \$5000 cash will be awarded to the top three designs. Ten Second Prize winners will receive the new Sony VAIO Laptop. Ten Third Prize winners will receive the Philips PC External CD-Rewritable Kit. Every winner that incorporates the Philips 51LPC into their design will receive an additional \$1000 bonus. (All prizes are in U.S. dollars. No checks will be issued to U.S. residents until a Social Security number is submitted.) All winners will be announced at the 2000 Embedded Systems Conference, as well as featured in the December 2000 issue of *Circuit Cellar*. All contestants are invited to submit their design write-ups for future *Circuit Cellar* articles.

10. Contest rules are subject to change. Check www.circuitcellar.com/Design2K for up-to-date information.

11. Address all correspondence concerning the contest to:

Design2K ♦ *Circuit Cellar* ♦ 4 Park St. ♦ Vernon, CT 06066
(860) 875-2199 ♦ Fax: (860) 871-0411 ♦ www.circuitcellar.com/Design2K ♦ contest.administrator@circuitcellar.com



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12TH ANNUAL CIRCUIT CELLAR DESIGN CONTEST

Name (please print) _____

Social Security Number (U.S. residents only) _____

Street Address _____

City, State, ZIP _____

Telephone (Work) _____ Fax _____

Telephone (Home) _____ E-mail _____

Project Title _____

Philips Semiconductors Microcontroller Used: _____

This project uses a 51LPC microcontroller (i.e., eligible for \$1000 bonus prize): Yes No

Project Description _____

I certify that this project entered in Design2K, *Circuit Cellar's* 12th annual Design Contest, is my own work, and I hold full rights to it. Furthermore, I have read and understand the rules of this contest, and I agree to abide by them.

Signature

Date