

## Pick up the pace

### USB2 allows photographers to download digital pictures faster

Some time back I had a professional photographer lament how long it took to download images from his camera. He loved digital photography, but found that the transferring of images from camera to computer was a big stumbling block in his workflow. I asked him if he were using USB 2 connections for his transfers. When I got a blank look, I knew I had a solution to his problem.

USB (Universal Serial Bus) has become a near universal style of plug style for connecting devices to computers, replacing PS/2, serial, parallel and SCSI connections. USB 1.1, developed in 1998, had a maximum rate of data of 12 Mb/s (Megabits per second). USB 2, developed in 2000, and looks identical to USB 1 increased the speed of transfer to 480 Mb/s, which is 40 times faster than USB 1.

Neither technology was immediately integrated into computers so there is a good chance that if your computer is over three years old it does not have USB 2 connections. Integration of USB 2 into cameras has been even slower. Most digital cameras are using USB 1 connections which result in long waits for downloads.

If you currently only have USB 1 connections, the solution to upgrade your computer to USB 2 is relatively easy and inexpensive. All you need is a USB 2 card, an empty PCI slot on your motherboard and a screwdriver.

With the computer turned off and power cord pulled, open the case, locate an empty PCI slot. Remove the dust cover for that slot, press in the USB 2 card and then use the screw from the dust cover to secure the card in place. Close up the computer and power up. The operating system, if it has been kept up to date will automatically take care of the rest. With the addition of the new card, your computer will be able to easily use external hard drives, CD/DVD drives, scanners, printers and anything that would benefit from a fast data transfer rate.



WAYNE PALMER

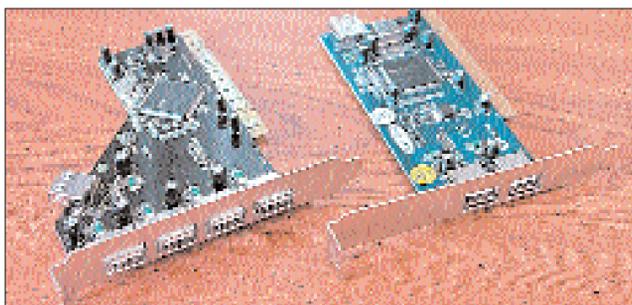
## Bits & BYTES

Note: Be sure to ground yourself before touching the inside of the computer. Simply touching something metal can do this. You may not think that a stray static spark is much to worry about, but that spark applied to a circuit board can be compared to a lightning strike.

With the new card installed you are ready to take advantage of the higher speed. USB 2 is backward compatible with USB

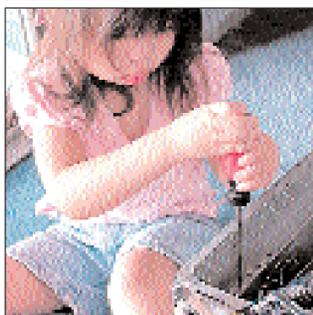
1 devices, but it will not increase the speed of the USB 1 device. So be sure to treat yourself to a new USB 2 card reader to reward your efforts. Use the new card reader instead of the camera for downloads which will be a time saver. Also, your camera will not be tied up during the process.

You can usually plug USB 2 devices into USB 1 sockets with no ill effects but your computer will warn you to expect slow performance.



PHOTOS PROVIDED

Above, USB 2 cards come in all shapes and sizes offering anywhere from two to five sockets. If your computer does not have USB 2 ports, putting some in is almost child's play, as shown at left. All you need is a USB 2 card, an open PCI slot and a screwdriver.



## Tips for using your camera's flash

Most of us have attended large events like concerts or sporting events and have seen flash units firing from the nosebleed sections giving the appearance of a firefly convention. I smile when I see this as I know the only thing those flashes are illuminating are the heads of the row in front of the photographer. If the photographer does get a usable picture, it is from the available light and the same picture could have been taken without the flash.

Unfortunately the flash unit built into most point and shoot cameras is relatively weak and the distance that it can illuminate a subject, around 10-15 feet, is a surprising small distance. Without getting into a physics lesson, the amount of light required to illuminate a subject increases exponentially as the distance increases. So a rather strong source of light is needed to light something that is more than 20 feet away. Professional photographers will use large flash units, which may double, or triple the range of the typical compact camera flash, but even those units will not illuminate a quarterback from the bleachers.

One thing that will help your photography is learning how far your flash can illuminate the subject. This can be accomplished by taking a series of pictures of the same subject at different distances studying where the light falls off to a point of being too dark to use. In addition, here are a few other tips to help improve your flash or low light pictures.

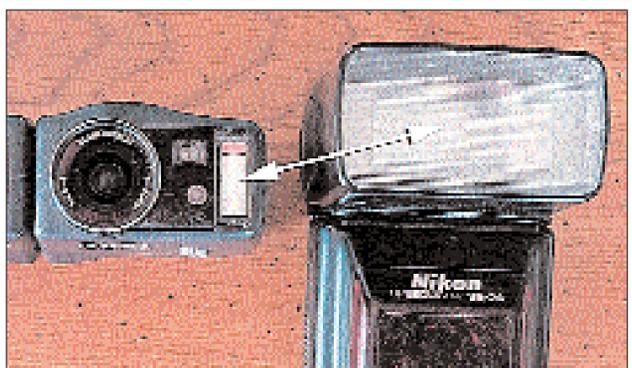


PHOTO PROVIDED

The difference in size between a built-in flash unit compared to a stand-alone unit is significant, but the increase in distance may only be two to three times.

- The flash ready light on your camera will often come on long before the capacitor has fully recharged. Images taken in rapid sequence may show uneven lighting, so if you can wait a few seconds between shots you will probably have better results.
- Make sure your camera's ISO setting is set on high to increase the camera's light sensitivity to offset the fall off that occurs as the limit of the flash distance is reached.
- Learn how to turn your flash off. Many times you can get a good picture if you just brace the camera and shoot a subject that is not moving.
- And lastly, it may be obvious, but simply get closer to your subject if at all possible.

## Sunny city leads the charge against fossil fuels

By PAUL BURKHARDT  
Associated Press Writer

FREIBURG, Germany — Rolf Disch has harnessed the sun in his city of Freiburg, starting with his own house.

It looks like an upside-down Apollo spacecraft and serves as a testing ground for ideas dreamed up by the 63-year-old solar architect.

The home slowly turns with the sun to charge a billboard-sized solar panel on the roof, and the waterless toilet emits an occasional malodorous whiff. Hanna Lehmann, Disch's wife, says she doesn't mind these features but admits she'd like to have a freezer, except that it would eat up too much electricity for her husband's liking.

"I miss my Campari on ice," she said.

Disch and his city are pioneers in energy-saving, and a growing number of ecotourists flock here to admire his house, known as the Heliotrope, from the Greek words for "sun" and "turn." Across the city, solar panels are on everything from the soccer stadium to entire neighborhoods with homes that produce more energy than they use.

"Energy was too cheap for people to take it seriously, but with the rise in energy costs and the IPCC report people see that they have to look for other solutions now," Disch said, referring to the U.N.'s Intergovernmental Panel on Climate Change, which documented scientific evidence for global warming.



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Workers for Pooh Corner put the final touches on a solar panel system on the roof of Broomfield Sheet Metal Inc. in Lafayette, Colo. Many communities, including the city of Freiburg in southern Germany, are embracing solar power.

With its focus on solar energy, Freiburg demonstrates the progress that can be made by promoting, developing and using renewable energy. But the city of more than 200,000 in the sunny southwestern corner of the country also is an example of how far technology in the solar sector has to go — it produces less than 1 percent of its electricity from the sun.

Residents boast that Freiburg's solar power roots go back to a protest in 1975 against plans for a nuclear plant.

"They didn't want nuclear power in their backyards and fields," said Thomas Dresel of the city's Environmental Protection Agency.

The protest also drew attention to the alternative energy solutions, Dresel said. The region now has more than 900 solar installations and is home to leading research institutions and companies

working to make renewable energy more practical.

In 1981, the Fraunhofer Institute for Solar Energy Systems was founded in Freiburg, and a number of similar facilities followed. Fraunhofer now employs some 500 people and is Europe's largest solar energy research institute.

Germany as a whole has followed Freiburg's lead in trying to save energy, encouraged by the environmentally friendly Green Party that was in former Chancellor Gerhard Schroeder's governing coalition. In 2000, Germany decided to phase out nuclear plants by 2020, and it has adopted legislation promoting the development and use of renewable energy sources.

Renewables made up more than 5 percent of Germany's total primary energy supply in 2006, according to the Environment Ministry. The government's goal is to

increase the share of electric power from renewables to 12.5 percent by 2010 and 20 percent by 2020.

Wind energy remains the country's leading renewable source of electricity, but solar power use has increased to about 750 megawatts installed in 2006, up from 83 megawatts in 2002, according to the German Solar Industry Association.

The solar industry is now becoming a \$6 billion a year business that builds more than 50 percent of the world's installed solar panels. About 43,000 people work in the industry, according to the association.

The federal government has spent more than \$1.75 billion on photovoltaic research since the late 1990s.

"Germany is technologically leading in solar technology, most solar plants are installed here and, what is even more important, are produced here," said Carsten Koernig, head of the German Solar Industry Association. "And this is the decisive factor, because other countries will follow and then we want to supply these huge growth markets with solar technology made in Germany."

In Freiburg, the city government started encouraging saving power in 1986 in "direct reaction" to the Chernobyl nuclear disaster of that year, and city and scientists have worked well together, said Karin Schneider, the Fraunhofer Institute's spokeswoman.

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