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2179.99%, 2184.99%, 2189.99%, 2194.99%, 2199.99%, 2204.99%, 2209.99%, 2214.99%, 2219.99%, 2224.99%, 2229.99%, 2234.99%, 2239.99%, 2244.99%, 2249.99%, 2254.99%, 2259.99%, 2264.99%, 2269.99%, 2274.99%, 2279.99%, 2284.99%, 2289.99%, 2294.99%, 2299.99%, 2304.99%, 2309.99%, 2314.99%, 2319.99%, 2324.99%, 2329.99%, 2334.99%, 2339.99%, 2344.99%, 2349.99%, 2354.99%, 2359.99%, 2364.99%, 2369.99%, 2374.99%, 2379.99%, 2384.99%, 2389.99%, 2394.99%, 2399.99%, 2404.99%, 2409.99%, 2414.99%, 2419.99%, 2424.99%, 2429.99%, 2434.99%, 2439.99%, 2444.99%, 2449.99%, 2454.99%, 2459.99%, 2464.99%, 2469.99%, 2474.99%, 2479.99%, 2484.99%, 2489.99%, 2494.99%, 2499.99%, 2504.99%, 2509.99%, 2514.99%, 2519.99%, 2524.99%, 2529.99%, 2534.99%, 2539.99%, 2544.99%, 2549.99%, 2554.99%, 2559.99%, 2564.99%, 2569.99%, 2574.99%, 2579.99%, 2584.99%, 2589.99%, 2594.99%, 2599.99%, 2604.99%, 2609.99%, 2614.99%, 2619.99%, 2624.99%, 2629.99%, 2634.99%, 2639.99%, 2644.99%, 2649.99%, 2654.99%, 2659.99%, 2664.99%, 2669.99%, 2674.99%, 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3679.99%, 3684.99%, 3689.99%, 3694.99%, 3699.99%, 3704.99%, 3709.99%, 3714.99%, 3719.99%, 3724.99%, 3729.99%, 3734.99%, 3739.99%, 3744.99%, 3749.99%, 3754.99%, 3759.99%, 3764.99%, 3769.99%, 3774.99%, 3779.99%, 3784.99%, 3789.99%, 3794.99%, 3799.99%, 3804.99%, 3809.99%, 3814.99%, 3819.99%, 3824.99%, 3829.99%, 3834.99%, 3839.99%, 3844.99%, 3849.99%, 3854.99%, 3859.99%, 3864.99%, 3869.99%, 3874.99%, 3879.99%, 3884.99%, 3889.99%, 3894.99%, 3899.99%, 3904.99%, 3909.99%, 3914.99%, 3919.99%, 3924.99%, 3929.99%, 3934.99%, 3939.99%, 3944.99%, 3949.99%, 3954.99%, 3959.99%, 3964.99%, 3969.99%, 3974.99%, 3979.99%, 3984.99%, 3989.99%, 3994.99%, 3999.99%, 4004.99%, 4009.99%, 4014.99%, 4019.99%, 4024.99%, 4029.99%, 4034.99%, 4039.99%, 4044.99%, 4049.99%, 4054.99%, 4059.99%, 4064.99%, 4069.99%, 4074.99%, 4079.99%, 4084.99%, 4089.99%, 4094.99%, 4099.99%, 4104.99%, 4109.99%, 4114.99%, 4119.99%, 4124.99%, 4129.99%, 4134.99%, 4139.99%, 4144.99%, 4149.99%, 4154.99%, 4159.99%, 4164.99%, 4169.99%, 4174.99%, 4179.99%, 4184.99%, 4189.99%, 4194.99%, 4199.99%, 4204.99%, 4209.99%, 4214.99%, 4219.99%, 4224.99%, 4229.99%, 4234.99%, 4239.99%, 4244.99%, 4249.99%, 4254.99%, 4259.99%, 4264.99%, 4269.99%, 4274.99%, 4279.99%, 4284.99%, 4289.99%, 4294.99%, 4299.99%, 4304.99%, 4309.99%, 4314.99%, 4319.99%, 4324.99%, 4329.99%, 4334.99%, 4339.99



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Coming up!

August 2003

Cover Story: Technology in the Real World
Lab Test: Security Devices

Ad booking deadlineWednesday, June 25
Distribution beginsWednesday, July 9

September 2003

Cover Story: Gadget Guide
Lab Test: Tablet PC

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Gone in a flash

Megan Johnston

FROM THE
EDITOR

One of the most memorable afternoons I spent when I lived in St. John's Newfoundland, was a trip to see the humpback whales off the island's Southern Shore. In late spring, they arrive from their winter breeding grounds in the Caribbean in enough numbers that a short boat journey almost guarantees a sighting of these grand creatures, which can grow up to 15.2 m (50 ft.) long and weigh up to 41 tonnes. Happily, my memory is good because the local photofinisher was not: the two rolls of film I shot were destroyed when the machine jammed and the technician opened it, exposing my shots of humpbacks breaking the ocean's surface to the cold light of day.

For those of us without a darkroom, film photography has always included an element of chance. The odds are highly in our favour, but light, unskilled technicians, or badly maintained developing equipment can be the equivalent of rolling snake eyes.

Digital photographers at all levels no longer have to take this gamble: they control their images from capture to print. Even if a photofinisher is entrusted with the printing, the photographer hands over a digital copy, not the original, which is kept safe on the media card or—even better—backed up on a PC hard disk or CD. Despite the reduced risks, digital photography's "film" equivalent has its own vulnerabilities.

Blame it on the rays?

One of our readers, Barclay Craig, recently returned from a tour of the Dalmation Coast, where he says he nearly filled two 256 MB and one 64 MB CompactFlash cards with photos. On slipping one of the larger capac-

ity cards into a card reader on his return, it would only display 157 MB of images—the last 28 images were missing. He wrote, "Checking with SanDisk tech, I was told that the loss was probably caused by the x-ray machine at the airport security check-in. This had created a fault in the formatting of the card."

There is very little information available on this matter, and what is there is conflicting. SanDisk's FAQ lists airport x-rays as a factor, but flash card maker, Crucial, states emphatically that "flash memory cards are not affected by the new, high-security, x-ray machines used in airports today."

So, next time you fly with your digital camera, you may want to do as Mr. Craig has decided to do, and carry your media cards separately for hand inspection.

Proper care and feeding of flash memory

Even if they are never exposed to x-rays, there are a few precautions you can take with your digital camera's memory cards. The memory recovery specialists at FlashFixers (www.flashfixers.com) offer the following tips:

- Reformat cards in your camera after downloading and saving pictures on your computer. Don't use the computer to format the card.
- Backup files from the memory card to your computer. You might also want to create a CD backup.
- Don't let the memory card get too full before downloading the pictures to your camera.
- Make sure batteries are charged sufficiently.
- Don't remove the card while camera is saving data to it.
- Wait a few seconds for the picture to write to the

memory card before shutting camera off.

- Don't exceed manufacturer's recommendation for taking pictures one after another. If taken too quickly together, the camera will not finish writing one picture completely before starting the next.
- Avoid large static charges, and be extra careful when handling cards in dry, low-humidity areas.
- Keep cards away from strong magnetic sources and extreme heat and cold.
- Don't remove card from card reader until it has finished communicating with the hard drive and all files on that card are closed.
- Some PC recovery applications, like Norton, Scandisk, and Fdisk, actually write to the card and can make corrupted cards worse. Don't use them for photo recovery.
- On a Mac, remember to trash the icon first before removing the card.

Should you take these precautions and the worst still happens, FlashFixers has a program called Image Recall it hopes you will purchase to recover your images. It supports CompactFlash, SmartMedia, MMC, SD, xD, Memory Stick, and microdrive. Currently it is only Windows (98, Me, NT, 2000, and XP) compatible, but a Mac OS X version is in the works.

Enjoy the issue,

Megan Johnston, Editor



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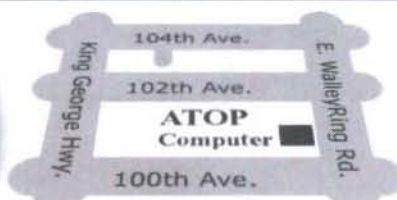
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22908506

< COMMENTARY >

What's 48,576 bytes between friends



READERS' LETTERS

email: letters@tcp.ca

How can a CompactFlash card be labeled 256 MB when it contains only 256,352,256 bytes or 244 MB? I can see it could be called a 256 million byte card. Smaller cards are also not holding the indicated numbers: a card labeled 64 MB shows 62 MB and 32 MB is 30.4 MB. It looks as though we are being misled about the actual capacity of CF cards.

Barclay Craig

TCP replies: This discrepancy arises from the practice of defining "mega" as million (thus, a megabyte is defined as 1,000,000 bytes) rather than using the binary system (where a megabyte is 2 to the power of 20, or 1,048,576 bytes). If you divide 256,352,256 bytes by one million you get roughly 256, but if you divide the same number by 1,048,576 you get 244 (which is also what the computer shows because it is using the binary system). Hard drive makers started this practice a few years ago by stating drive capacities this way, and it now seems to be common.

Athlon XP vs Pentium 4 anomaly

The "Processor Wars" chart (TCP June 2003) shows the Athlon XP 3000+ is slower, much slower, in all categories except MFLOPS. Since there is no comment in the article on this anomaly, I assume it is a typo. Is this a typo and what is the correct value?

No name provided

Sean Carruthers replies: Actually, for the Pentium 4 processors you'll notice two numbers separated by a slash under the Whetstone rating. The first number is the result achieved by the processor without SSE2 extensions turned on, and the second number is with those extensions turned on. The second number is the processor working at full capacity, and those numbers are all substantially higher than that of the Athlon. It was my fault this wasn't labelled more clearly.

Is all ink created equally?

I just read the reply to Ian Harrison ("Readers' Letters," TCP April 2003) and I've rarely read such a cop-out.... Ink is ink for goodness sake. It's been around for

a few hundred years, and I don't believe its manufacture involves many great secrets. As for ink being designed for very fine nozzles... what particular property of the ink is so sacred? Viscosity? cleanliness? Density? No great secrets here, surely?

Then there's the leaking cartridge. You don't have to pry a cartridge apart to fill it. You can drill a little hole in the top and put the ink in with a syringe supplied in the refill kit... I've refilled a lot on Canon cartridges that way, quite successfully. My Epson C 60 printer has me beaten, however... It simply refuses to pass any ink once the factory installed capacity is exhausted.

Sean [Carruthers] went on to warn readers that the manufacturer has every right to refuse to honour the printer warranty if a cartridge leak has caused a failure. Big deal! Today, in our local Future Shop, I saw a new Epson printer, similar in specification to my one-year-old model, whose price is less than the combined price of the black-and-white and colour cartridges I need to refill my C 60! Out in to the garbage goes my C 60 tomorrow, and welcome to a new Epson complete with two cartridges later in the day.

Isn't this a scandalous situation? Just think of it from an ecological point of view, let alone one of consumer rights.

Martin Brennan, Ottawa

Sean replies: I totally agree with you that there's something awry when it costs less to buy a new printer than it does to replace the cartridges for your old printer. It's gotten to the point when the most value-oriented printers—most of which are perfectly capable of photographic reproduction—are at the point of being disposable for that reason alone.

As for whether "ink is ink," I disagree: manufacturers formulate ink to react properly when the printer hits it with the signal to eject. The Epson printer uses a minute electrical charge to eject the ink, which is one reason you may have had problems with the refill—it just may not be reacting properly to that tiny jolt. On the other side, the thermal inkjet printers use a little shot of intense heat, and if the refill ink doesn't have exactly the right thermal properties, it may eject in a very messy fashion. That's not to say that it won't eject, it just may not be optimal. Of course, if the refill ink is too thick, it won't eject at all, it will simply gum up the nozzles. □

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WHAT'S NEW

By TCP Staff

Now that summer's here, Canadians face heart-wrenching decisions: whether to go out and play while the weather is nice, or stay in to catch the next installment of that favourite TV show. Well, here's a way to do both. **Archos** (www.archos.com) has released the **Video AV120**, a portable digital recorder with a 20 GB hard drive that will record and play MPEG 4 video, in addition to the more standard MP3 audio format.



With the addition of a digital video recorder module, users can record and play back up to 40 hours of video record-

ed from a TV, camcorder, or video player, according to Archos. The device has a built-in 237x234 LCD screen, or can be connected to a TV for playback.

The AV120 can be used to play MP3s or display digital photos as well. Other accessories include a digital camera attachment, an FM radio tuner, and memory card readers in a variety of formats.

The device measures up at 10.9x7.9x2.8 cm (4.3x3.1x1.1 in.) and weighs 290 g (10.23 oz.). It's Windows and Mac compatible and connects via USB 2.0 for data transfer. The Video AV120 is priced at US\$399.95, and the Video Recorder module will add another US\$59.95 to the bottom line.

When the first electric guitar made its debut more than 70 years ago, few could have predicted the way it would revolutionize music. So who knows what the long term effect of electric sheet music might be? **Freehand Systems'** (www.freehandsystems.com)

MusicPad Pro is a tablet-style computer that can store up to 5,000 pages of music, according to the company, which musicians then read directly off the backlit,

12.1-inch TFT LCD display. Pages are turned with a touch of the screen, or with an optional foot pedal.



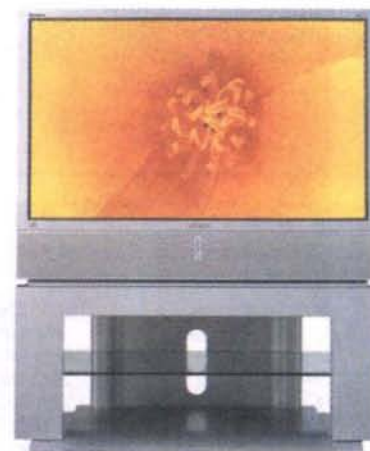
Digital music can be directly imported to the MusicPad Pro in popular graphics file formats such as PDF or JPEG, or users can scan their music into a PC and download it to the device. The interface allows users to make rehearsal marks and notes in their own handwriting on the screen, and erase them when they're no longer needed.

The MusicPad Pro measures 33.8x25.1x4.6 cm (13.3x9.9x1.8 in.) and weighs just under 2.25 kg (5 lb.), according to Freehand Systems. There are two models available: the basic model runs on AC power, and comes with 32 MB flash memory and 64 MB RAM, for US\$999; while the **MusicPad Pro Plus** adds extra flash memory (for a total of 64 MB) and a rechargeable battery, for a total of US\$1,199. The optional foot pedal will add an extra US\$69 to the bill. Educational discounts are available—see the Web site for details about qualifications.

Have you noticed that **HMV.com** (www.hmv.com) is looking a lot like **Amazon.ca** (www.amazon.ca) these days? In fact, the two companies partnered up recently and relaunched the HMV site as a co-branded site, for which Amazon.ca will provide the inventory, content, and customer service. HMV-specific information, such as store locations and job opportunities, is still available on the site. Amazon.ca also continues to offer music and movies independently on its own site.

Continued on page 38

Spotlight



Big screens for semi-deep pockets

If last month's Test Lab on 42-inch plasma screens had you salivating like Pavlov's famous pooch, only to realize that \$8,000-plus was more than you want to spend on a TV, take heart. **Samsung** (www.samsung.ca) has thrown consumers a bone with its line of **DLP** TVs, which start at about half the price of their plasma peers. The new displays are available in 43-, 50-, and 61-inch models for \$5,000, \$6,000, and \$7,500, respectively.

The rear-projection, high-definition TVs are the first available in Canada using Texas Instruments' digital light processing (DLP) technology. With DLP, the projector's lamp shines the TV (or other input) signal onto a chip covered by 1.3 million tiny, tilting mirrors, and the image is magnified through a projection lens onto the micro fine-pitch (0.155 mm) screen. The resulting display is very clear, even close up, and has a 160-degree viewing angle.

The new screens—which include a wide range of connectivity options allowing you to use them as TV or connected to a PC for presentations—have a 16:9 aspect ratio.

Unlike plasma displays, they can't be hung on a wall (the 61-inch screen is about 45 cm deep). However, Samsung's DLP models are considerably lighter than their plasma TVs (under 45 kg for the 60-inch model, and less than 36 kg for the 50-inch display).

Samsung plans to add 46- and 56-inch models this year, which will feature a thinner bezel. It says future DLP TVs will likely be slimmer too, at about 38 cm for the biggest models.

Radio lovers can finally record now, listen later

Think of it as something like a TiVo for radio lovers: the **Radio YourWay**, from **Pogo! Products** (www.pogoproducts.com), is described by the company as "the first portable digital AM/FM radio recorder." Users can record in real time, or set a timer to record a show later, with the daily and weekly options for regular programs. In addition, the device can be used as a voice recorder, or to listen to MP3 music.

The recorder comes with a USB cable for transferring sound files to and from a PC, and has an SD/MMC memory card slot. It has 32 MB of internal memory, which the company says will hold four hours' worth of AM or FM broadcasts. It's priced at US\$149.99.



Spotlight

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Digital camera outlook

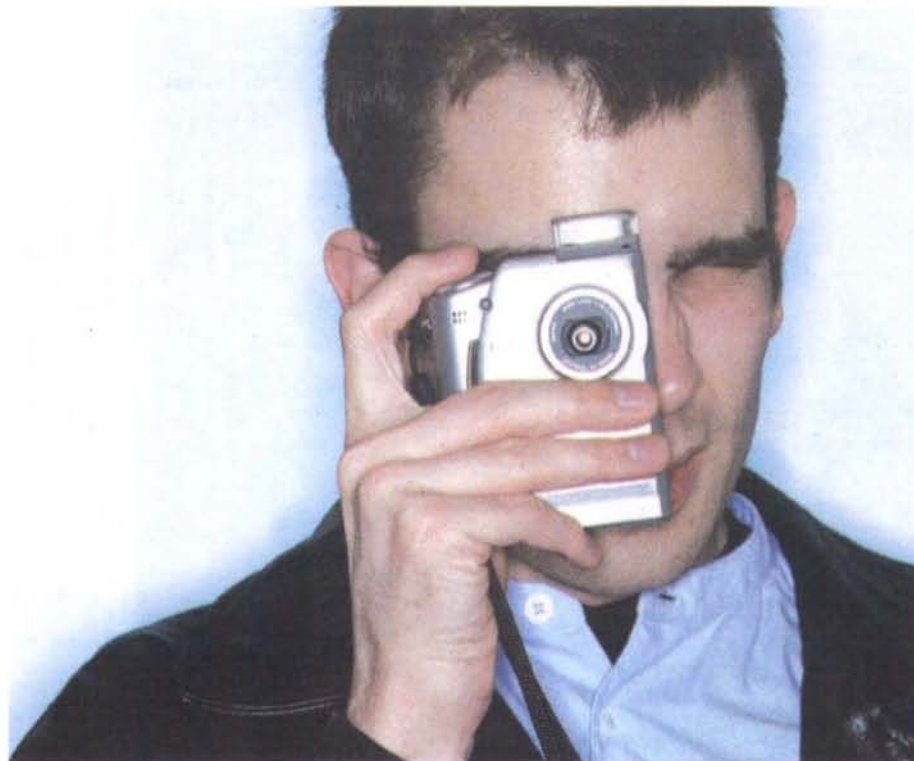
Something for everyone as 2003 shows maturity, stability

By David Tanaka

Digital camera development has reached a plateau. Today, a \$300 digital camera will take pictures that are good enough for most people, while \$2,500 will buy a high-end camera that will satisfy an advanced amateur or even a pro. While improvements still happen with each new model change, they are becoming incremental.

That hasn't always been the case. When we started reviewing digital cameras in *The Computer Paper* several years ago, each new generation of camera we looked at showed a big developmental jump both in megapixels and overall sophistication, essentially making whatever came before it obsolete. Today, categories have formed and manufacturers seem to have settled on developing all of them, not just racing towards ever more pixels.

This stabilization is good news for consumers for two reasons. First, it means you no longer have to buy at the top to get a good quality product. Second, your investment is protected against obsolescence longer. Sure, next year's model will have a couple of nifty



features that the camera you bought this year doesn't have, and prices will probably decline, but as an instrument to record the special moments of your life, this year's model will be more than adequate for years to come.

Unifying platforms

One area where this stabilization is showing up is in the increasingly common practice of manufacturers building a couple of models from a single basic design. The models will look the same

and will mainly differ in sensor size. A case in point is Canon, with its S45 and S50 models, which are of identical proportions and nearly identical specifications, except that the S45 is a four-megapixel camera and the S50 a five-megapixel model.

Pentax has followed this pattern with the Optio450 (four-megapixel) and Optio550 (five-megapixel) models it introduced this spring, two peas in a pod except for sensor size. Noteworthy on these is the 5X optical zoom, which is unusual—and welcome—for this class of camera.

Likewise, Nikon's new CoolPix 2100 (two megapixel) and 3100 (3.2 megapixel) fit in this category, as do some of Fujifilm's models such as the FinePix 2800 (two megapixel) and FinePix 3800 (three megapixel).

And while we can't say for sure because the model isn't available yet, the Olympus Stylus 400 (four megapixel) sure looks the same as the recently introduced Stylus 300 (three megapixel).

Common sense would say that manufacturers do this to reduce development and manufacturing costs. Presumably

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Shopping for a digital camera

Go into any camera or consumer electronics retailer and you'll be confronted with a big selection of cameras varying in size, shape, and specs. Given the current state of digital camera development, you can't assume that a pro-looking camera performs better than one that fits in your shirt pocket, or that more megapixels is better. Prices are a general indicator of quality and performance, but within any given price band, there are a few variables digital camera shoppers should keep in mind:

- **Pixel count:** Two- to five-megapixel models are now common. Six-megapixel and greater cameras are so far restricted to DSLR models. More megapixels mean bigger—not necessarily better—pictures. Image processing systems and lenses also contribute to image quality.
- **Size, shape, weight:** Variations here include flat and square (Minolta Dimage X and Fujifilm F410), ultra compact

(Pentax OptioS, Olympus S-50, Canon Digital Elph), blocky or cube-like (Fujifilm S-3800 and S602, Nikon 5700), elongated like a lozenge (Canon S50, some Sony Cyber-shots), tall and upright (mainly Fujifilm models, like the F601), like a traditional 35 mm rangefinder (many models here, including Canon G3, Olympus C-5050) and approaching 35 mm single-lens reflex in size and shape (Minolta Dimage 7Hi, Olympus E-20). Size, shape, and weight contribute to the camera's overall comfort, they will influence whether you'll continue to enjoy using it after the novelty of your new camera has worn thin. So spend time with a few different models to see if they feel right to you.

- **Optical zoom:** Most have a 3X zoom, but some models include 5X, 8X, or even 12X optical zoom lenses for strong telephoto performance. Be wary of digital zooms, which are enlargements of a

smaller part of the sensor, rather than optical magnifications.

- **Controls:** While even the most advanced digital camera has an Auto mode for point-and-shoot simplicity, models will differ in the range of manual exposure controls offered. There is also a lot of variability in the location of controls, how they work, as well the software navigation and menu systems. Try a few models to see if you are comfortable with the placement of controls and menu navigation.
- **Memory card type:** Do we really need five types of memory cards? Probably not, but that's what we're faced with. Types used today include CompactFlash (CF), SmartMedia (SM), Secure Digital/MultiMediaCard (SD/MMC), xD Picture Card (xD), and Memory Stick. Some cameras accept more than one type. Memory card type is not really a factor until you get into prosumer gear,

or if you've already bought cards for another device, like a PDA or camcorder.

- **Batteries:** Choices here are a proprietary design versus a standard format like AA. The advantages of proprietary designs include flexibility of shape and size, which allows camera makers more options for design, and sometimes longer battery life. The disadvantages are high cost and limited availability. If the battery dies, you can't just go to the corner store to pick up spares, and if you do decide to stock up, each proprietary battery will cost \$50 to \$100.
- **Extras:** Does the camera come with image-editing software or other utilities? Does it come with a memory card, and if so, what capacity? Does it come with batteries, and/or a charger? Will it be compatible with your computer (the good news is most cameras support both Windows and Mac)?

—David Tanaka

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Digital camera outlook

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that is reflected in the prices we face as consumers—which are declining every year. But there's also the issue of ergonomics at play. There are only so many variations to a basic box shape that, as a camera, feel right and work effectively. Once manufacturers discover one that works well, they may be reluctant to abandon it just for the sake of stylistic change. In the film camera world, some designs have endured for decades with only minor changes.

Despite the foregoing, however, the digital camera sector has a ways to go to reduce model clutter. A shopper will still be confronted with a dizzying array of overlapping models, not only from separate manufacturers but also within a single manufacturer's offerings.

More for prosumers, at less cost

If you are interested in photography as a serious pursuit you'll be hearing the call of the digital single lens reflex (DSLR) camera. This is an interesting product category. The cameras themselves are, for the most part, based on 35 mm single lens reflex designs and have the



advantages of such systems, not the least of which is interchangeable lenses.

Last year was something of a watershed for this class of camera. Canon, Fujifilm, and Nikon all introduced six-megapixel DSLR models priced within a few hundred dollars of each other: all around \$3,500. While that's a big ticket, cameras of this type previously cost significantly more, so this trio represented a price/performance breakthrough and a competitive marketplace.

This year, prices are even better, thanks to Canon, which introduced a new model, the EOS 10D, just before the

annual Photo Marketing Association convention and trade show in March. It replaces the D60, and while Canon Canada's suggested retail price is \$3,200, it is now selling at retail for around \$2,500—about \$1,000 less than what the D60 was selling for at the beginning of the year. Nikon has reduced the price of its D100 and Fujifilm the price of its FinePix S2 Pro to stay in the game.

Other news for prosumers from the PMA show came from Pentax and Olympus. Pentax was displaying a new DSLR called the Pentax *ist D. This is scheduled to be on the market this sum-

mer and accepts Pentax's K series of 35 mm lenses. Pentax says it will be the smallest, lightest DSLR on the market—and priced competitively. The body weighs 510 g (18 oz.), compared to the Nikon D100 at 700 g (24.7 oz.), the Fujifilm FinePix S2 Pro at 760 g (27 oz.) and the Canon EOS 10D at 790 g (27.9 oz.).

Behind glass in a display case in the Olympus booth was the first product based on the Four Thirds specification introduced by Olympus and Kodak last summer: an Olympus E digital SLR, along with a family of interchangeable lenses.

The goal of the Four Thirds architecture is to start with a clean slate and create a new DSLR camera rather than basing it on a 35 mm film camera system as other manufacturers have done. Olympus says differences in the surface structure between film and electronic image sensors limit the ability of a lens designed for film to perform optimally with an electronic sensor. The Four Thirds system claims not to have that limitation, since it is designed specifically for digital. Olympus had scheduled an

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NEC AS125F 22" 1600x1200 78Hz White	\$759.00
NEC FE21115B 21" 24MM Flat CRT 1920x1440 75Hz	\$899.00
NECLCD 1580XMM450 14 Ports USB /Speakers	\$429.99
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NEC ASL409V 19" 1280x1024 75Hz 29mm	\$899.00
NECLCD 1960SX 19" 1280x1024 @80Hz DVI-DVGA	\$1399.00
NECLCD 2080XUD 20" 1600x1200 White Cabinet	\$1999.00
NECLCD 3000 30" 1280x768 WXGA (Call for Special)	\$6399.00
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Samsung 191TN 17" 19" LCD 1280x1024 0.264mm	\$929.29
Samsung 152T /172T 15" /17" LCD AV or VGA	\$569.95
Samsung 151MP /171MP 16" LCD 1280 /PHD TV ready	\$649.13
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Sony CPDE540B 21" CRT 1280x1024 @65Hz	\$889.00
Sony SDMS51RB 15" LCD 1024x768 1LCD	\$499.00
Sony SDMS51RB 15" 17" 17" LCD 75Hz 1280x1024	\$999.16
Sony SDMS91B 19" TFT LCD Black 1280x1024	\$1399.00
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Viewsonic P70F+SB 17" 1280x1024 25.5mmDP	\$249.00
Viewsonic P75F 17" CRT 25.5mmDP 75Hz 1344	\$259.00
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Viewsonic VG500VX500 + 450 1 1024x768 LCD	\$499.51
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NCIX.com Tech Spotlight LOW NOISE COOLING

Tired of the persistent noise that comes from your PC? The bevy of moving parts that keeps your computer humming does a lot of humming itself, and distracts us from the sounds we want to hear — game audio, MP3s, audio tracks to movies.

The great news is that you don't have to suffer in silence anymore! A myriad of new quiet cooling solutions are now available to dampen the noise from those whirling drives, silence those high speed cooling fans, and still let you enjoy the performance you expect from your PC.

Every component in your PC generates heat, and to get rid of all that heat being created, you need to move air around your PC's case. Moving that air of course, requires fans. Fans of course, make noise. Lots of it.

The solution for silent computing is to either slow down the fans — while making sure heat is still eliminated of course — or if possible, to get rid of fans altogether.

Let's start with the essentials — power supply (PSU) and the processor (CPU). These generate the most heat in your typical computer system and need the most active cooling.

Quality power supplies from **Antec**, **Enermax** and **Zalman** are usually built with fan speed controls that let you adjust the rotation speed (and noise) of the fans.

Enermax EG46SP-VE 431 watt PSU (CODE 9779-1018)	\$113
Enermax EG36SP-VE 350 watt PSU (CODE 6051-1018)	\$63
Antec TruePower 430 watt PSU (CODE 8727-1018)	\$113
Zalman ZM300A-APF 300 watt PSU (CODE 8839-1018)	\$104

More efficient low noise CPU cooling solutions from **Vantec**, with their unique tip magnetic fan mechanism, and **Zalman** with their unique metal fin designs eliminates most of the noise from older and stock cooling solutions.

Vantec AeroFlow Socket A CPU Cooler (CODE 9034-1018)	\$29
Zalman CNPS3100+ Socket A Cooler (CODE 8835-1018)	\$42
Zalman CNPS7000-ALCU Socket 478 Cooler (CODE 9496-1018)	\$63
Zalman CNPS6500B-ALCU Socket 478 Cooler (CODE 9470-1018)	\$60

Smaller fans, such as your motherboard's chipset and your PC's video card, often use smaller, but nonetheless noisy fans. We sell some great **Zalman** products such as their **NorthBridge Chipset Cooler** and their **Fan less VGA Heat Pipe Cooler** which replace the stock fans and reduces noise substantially.

Zalman Fanless North Bridge Cooler (CODE 9081-1018)	\$10
Zalman ZM80A-HP Fanless VGA Cooler (CODE 9080-1018)	\$55

Almost every PC has case fans — secondary fans that just move air around the inside of your computer, and forces that hot air out. We carry a large selection of low noise case fans that can replace current cooling solutions, and we stock **Zalman's Fan Mate** which can be used to slow down any fan installed in your PC (and reduce the noise).

Zalman ZM-F1 80mm Case Fan (CODE 8837-1018)	\$10
Vantec Stealth Case 80mm Fan (CODE 8975-1018)	\$20
Antec Blue LED 80mm Case Fan (CODE 8273-1018)	\$12
Vantec Nexus Front Panel LCD Temp Monitor (CODE 8963-1018)	\$61
Zalman Fan Mate 3 Pin Fan Speed Controller (CODE 8840-1018)	\$10

NCIX.com carries some unique cooling accessories as well. **Rubber Fan Mounts** (enter SAVINGS CODE 9623-1018) that allows you to isolate case fans in your PC from the metal and plastic in your computer's case and helps reduce noise and vibration from active cooling. We also carry **sound absorbent matting** (enter SAVINGS CODE 8626-1018) that can be used to line the inside of your case, and absorbs noise and vibration.

The easiest solution comes from **Antec**, with the "Piano Black" **Sonata PC case** (enter SAVINGS CODE 9479-1018) for just \$161. Designed to be a complete low noise solution, it includes a trusty 380 watt Antec power supply and just one large variable speed case fan, and some clever design touches that all help in reducing the overall noise from all your other components, while keeping your PC cool and elegant.

Visit **NCIX.com** today, or call us and talk to an NCIX.com sales representative to try out some of these low noise solutions yourself. Your ears will thank you!

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Phototainer stores images, tunes

By David Tanaka

The Phototainer is an attractively styled portable storage device combining a 20 GB hard drive, image viewer with 3.5-inch colour LCD display, and MP3 player; all controlled by a RISC processor and Linux operating system. About the size of a small paperback book (14.3x9.2x3.2 cm and 340 g), it has USB 2.0, TV-out, and 1/8-inch stereo headphone connectors, a small built-in speaker, plus a CompactFlash II slot for offloading images from your digital camera (or other media cards with an adapter). The unit ships with a wireless remote control, AC adapter, cables, PC software, and cloth carrying bag.



Phototainer 300P

From: InnoPlus, www.innoplus.com

Price: \$849, \$69 (extra battery)

Pro: 20 GB storage capacity. USB 2.0 for fast data transfer to PC. Screen larger than competing products. Versatile image viewer. MP3 player built in. Removable Li-Ion battery. Linux OS offers potential for further development.

Con: Fair battery life as MP3 player. Can't view images and play music simultaneously.

Controls and interface

The main controls are under the flip-up colour screen. A circular four-way switch with an "enter" button in the middle dominates, and is surrounded by smaller function buttons. Hit the On button and the unit boots up, just like a little computer, to a File Explorer screen. File Explorer is one of four built-in applications (the others are Music Player, Photo Viewer, and Setup). It includes basic file management functions such as select, copy, paste, and delete. You can also open and read text files from File Explorer. Setup has eight sub-menus covering adjustments for image and music playback, power management, date and time, screen brightness, and more.

Navigation is accomplished by using the function buttons and four-way switch to work through menus or directories. This sequential approach can get tedious if you have to drill through several submenus or folders. But in the scheme of things, it's no better or worse than the control interface you might find on a digital camera.

A separate set of music player buttons (start, pause, next, previous, volume, and hold) is on the side of the unit, plus a dedicated copy button sits near the CompactFlash slot for one-touch copying of data from a memory card to the Phototainer.

Photos and music

The Music Player and Photo Viewer are the primary applications. The Photo Viewer main screen is split into three panes showing the file listing (file name and size), plus a thumbnail image and EXIF data (image dimensions in pixels, date and time taken, f-stop, and shutter

speed) of the highlighted file. Optionally you can switch to thumbnail view, which fills the screen with thumbnail images. Photo Viewer displays JPEG (but not TIFF or raw) images.

Still images can be viewed full-screen, and you can also zoom in or out. Images can be rotated in 90-degree increments, and to help you assess composition, you can overlay grid lines, toggling through four, nine or 16-segment grids. The slide show player has preset durations of one, three, five, seven, or 10 seconds, plus a manual control mode.

The MP3 player is a good basic performer, with separate bass and treble controls. You can select sequential (in alphabetical order of file name) or randomized play. While the software won't create playlists, it plays them (M3U format), so you can use something like WinAmp to create and save playlists when the Phototainer is tethered to your PC. During much of the test period, we used and enjoyed the player a lot.

Performance

The Phototainer showed images continuously in slideshow mode for approximately an hour and 40 minutes before the battery expired. In a separate test, the unit gave three hours of continuous music playback. We consider the length of the image viewing time quite good

since in actual use, you'd probably review images for just a few minutes at a time. MP3 battery performance is only fair compared to the several hours that some hard drive-based MP3 players can deliver. Fortunately, the unit uses a removable Lithium-Ion battery, and a second battery (costing approximately \$70) would be useful if you plan to use this device extensively away from a power plug.

To test image download speed, we loaded a Crucial 128 MB card (a fast card, roughly comparable to the SanDisk Ultra series) with 100 MB of image files and compared the time it took to copy the images to the Phototainer (one minute, 55 seconds) and a notebook hard drive using a PC Card adapter (one minute, 26 seconds).

Phototainer has a few minor idiosyncrasies. The unit won't multi-task—so you can't listen to MP3 music while viewing pictures. While it does simultaneously play the audio and video portions of AVI movies, you must launch AVIs from File Explorer, as they don't show up in Photo Viewer.

Another oddity: tone controls are not in Music Player, but in Setup. When connected to a computer through USB it becomes an external hard drive only—all built-in functions are locked out. You can recharge the battery using the USB connector, but that works best with the

Canucks enter CF market

CoreMicro Technology Inc (www.coremicro.ca) of Mississauga, Ont., is waving the flag with its "assembled in Canada" line of CompactFlash memory cards. CoreMicro offers the 32X Type I cards in 128 MB, 256 MB, 512 MB, and 1 GB capacities. The company claims that its 32X rating means the cards are 2.5 to 3.5 times faster than standard CF cards, with a read speed of 4.8 Mbps and a write speed of 4 Mbps. Pricing is competitive, for example the 256 MB unit has a suggested price of \$129.

—David Tanaka

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Phototainer stores images, tunes*Continued from page 20*

unit turned off; otherwise the power drain seems to be greater than the charging rate.

Conclusions

At \$850, the Phototainer sits between 20 GB models of two competitors, the Delkin eFilm PicturePad (\$950) and Nixvue Vista (\$750) according to prices we found on a couple of Canadian photo retailer Web sites in mid-April. The Phototainer includes USB 2.0, an MP3 player, a big display and versatile image viewing software. It has a lot going for it. The Phototainer software is a work in progress, with updates posted regularly. In fact, we had to rewrite parts of this review a couple of times, because limitations we encountered (e.g., no playlist support) were addressed by updated software. We think this bodes well for future enhancements. Like any hard drive-based device, it should be handled with care and bumping and jarring should be avoided, especially if the hard drive is spinning—as it would be during music playback. If we were in the market for a portable digital image storage unit, the Phototainer would definitely make our short list. That it is also an MP3 player is sweet icing on the cake. □

Note: Our thanks to Canadian distributor, Paratech Trading in Burnaby, B.C. (604-630-0777), for loaning us a Phototainer to review.

Digital camera outlook*Continued from page 14*

official launch event for the end of June.

The Four Thirds moniker, incidentally, derives from the 4:3 aspect ratio of the sensor, which is the same as a typical computer monitor, and also close to the familiar 8x10 inch dimensions (8x10.67 actually) of photographic prints.

Industry in transition

During a briefing at the PMA show, InfoTrends Research predicted that in 2004 unit sales of digital cameras would surpass film camera sales. In the U.S., for the first seven months of 2002, digital camera unit shipments were up 35 percent, while film camera shipments were down 25 percent, according to PMA. And we heard informal comments on the show floor of manufacturers concerned that they might not be able to meet demand for some digital camera models this year. □

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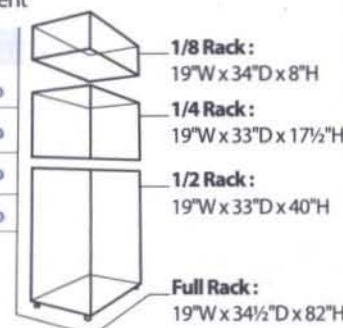
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Shirt-pocket stowaways

By Sean Carruthers

PowerShot S400 Digital Elph

From: Canon, www.canon.ca

Price: \$699

When it comes to shirt-pocket digital cameras, Canon's Digital Elph line comes to mind. The PowerShot S100 was the first truly compact two-megapixel digital camera, and Canon has been improving the line ever since.

The newest member of the family is the PowerShot S400, and it's every bit as impressive as the S100 was: not only does it manage to cram a four-megapixel sensor into a body that's almost exactly the same size as the earlier models, it sneaks in a 3X optical zoom (earlier models were 2X) and keeps all of the bonus functionality that made more recent Digital Elph models so nice.

Earlier models in the line featured two or three modes: record, playback, and possibly movie mode. The PowerShot S400 also includes a jog dial on the left side of the rear panel, allowing you to easily switch between automatic mode,

manual capture mode, movie capture, and panorama. The panorama mode is particularly nice, displaying a portion of the previous shot on the left portion of the LCD screen, allowing you to line up your next shot properly; it's not a unique feature—other cameras have done this before—but it's a nice addition to a camera that's so compact. The one problem with this jog dial is that it's fairly easy to switch modes by mistake, especially if you have put the camera in your pocket.

As with previous versions of the



Digital Elph, the S400 uses Type I CompactFlash (CF) for picture storage, and comes with a 32 MB card. There's a driver disk onboard, but many newer versions of Windows will automatically recognize the S400 as a digital camera when you plug it into your computer's USB port. Though this doesn't give you access to the full CF card, it does make it fairly easy to move your images to the PC by dragging and dropping.

The Digital Elph wouldn't be a Digital Elph if it didn't have a rugged metallic casing, and this one does. You probably

won't want to keep the camera out in the rain, but it's certainly sturdy enough to handle the occasional drop or knocking about. It all adds up to a great addition to the Digital Elph lineup.

Stylus 300 Digital

From: Olympus America Inc., www.olympus.com

Estimated price: \$599

Olympus' digital camera line is fairly extensive, but until recently, a glaring gap has been the lack of a higher resolution compact model—Olympus cameras of three megapixels and up were always a touch bulkier. Enter the Stylus Digital, which marries higher-resolution with a true shirt-pocket form factor.

The Stylus Digital features two "all-weather" models, the Stylus 300 Digital and the Stylus 400 Digital, at 3.24 and 4.07 megapixels, respectively. Both feature the same size (9.9x5.6x3.35 cm) and weight (165 g); the only significant exterior difference between the two is the gold lens cover on the Stylus 400. We got our hands on the Stylus 300, so all com-

Continued on page 26

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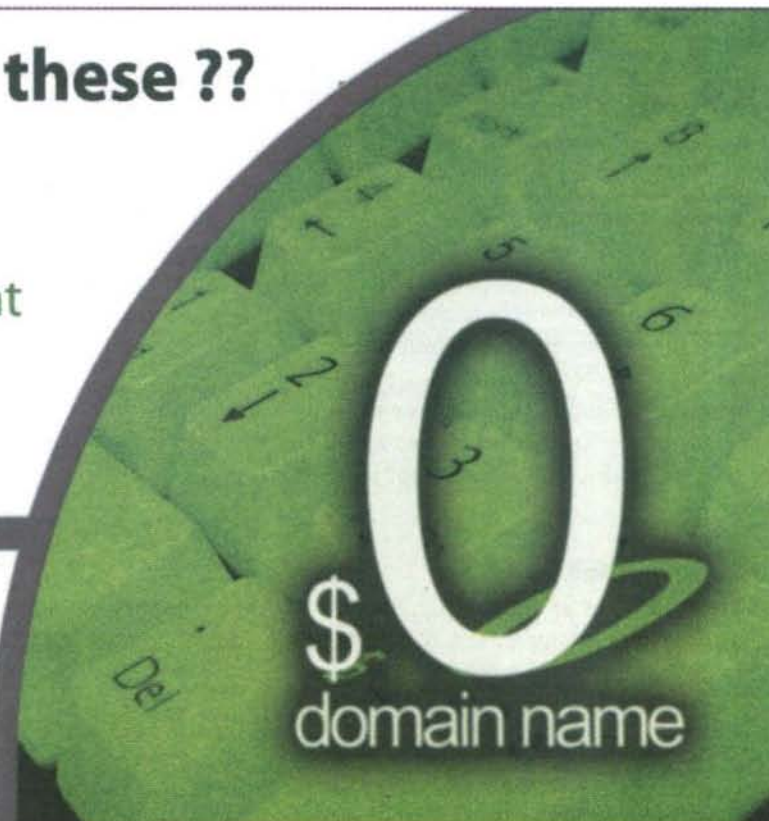
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Breakthrough scanner with automatic feeder flawed

By Doug Alder

The Hewlett-Packard ScanJet 5500c is a significant product, as it is the first consumer-level scanner that can actually handle batches of photos. I have wanted a scanner like this for a few years, to deal with the two large boxes of family photos gathering dust in the closet. It's a great device, but also a flawed one.



HP ScanJet 5500c

From: Hewlett-Packard, www.hp.com

Price: \$449 (with \$70 rebate coupon)

Capabilities

The Auto Photo Feeder on this unit uses

a cushion of air to prevent photos from being damaged as they pass through the scanner. The feeder handles up to 24 photos at a time in 3x5-inch and 4x6-inch formats, and generally works quite well. Best results seem to come by grouping photos of a common size and lining them up together with the plastic edge guide. The scanner can handle documents up to 8.5x11 inches using the manual flatbed scan area, and slides and negatives using the included transparency adapter. It has a maximum scan resolution of 2,400 dpi (optical) and 48-bit colour.

It is best to organize the batches of photos and group them as either landscape or portrait mode. This saves time later, because all the landscape photos need to be flopped on their side in software. Another timesaver is to feed portrait mode photos in top first, so the scanned images won't have to be flipped.

The scanner has five large buttons on the front, which allow users to scan directly to the Image Gallery software,

the Web, email, directly to the printer, or to the Memories Disc software. An LCD screen on the front of the scanner allows you to set the number of copies to print, and a toggle lets you choose colour or black and white.

Speed

My computer's USB port is the older 1.1 format, but I was able to plug in the scanner's USB 2.0 connector as the new standard is backward compatible. HP claims the ScanJet 5500c can scan a 4x6-inch photo at 200 dots per inch (dpi) in 25 seconds. In my tests—scanning in batches of photos—it seemed to average 30 seconds per photo, regardless of size. If you have USB 2.0, your results will probably be faster.

In addition to photo and imaging work, the scanner can be used for other tasks, such as document scanning. For example, scanning a letter-size document to Word—via the integrated Iris optical character recognition software—took about 50 seconds.

Because it can process batches of up to 24 photos at a time, multi-tasking becomes important. Fortunately, the ScanJet 5500c software runs well as a background task. This allows you to do other things, such as organizing, cropping and editing photos, or even writing articles about scanners, as the scanner grinds away in the background importing images into your PC.

Major complaints

The single largest time waster with this scanner is that the underside of the lid is included in the photos, making it necessary to manually crop every single photo in some kind of image-editing program. This significantly reduces the speed improvements offered by batch scanning.

Another issue is that older photographs, images on very stiff card stock, those with uneven edges or significant bending, and Polaroids all had trouble going through the feeder.

The bundled software is not as polished as I would like to see. The HP

Continued on page 27

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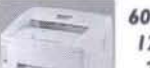
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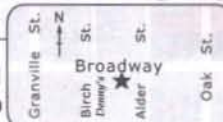
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MS Office XP SBE / Pro (OEM) \$279 / \$469

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Shirt-pocket stowaways

Continued from page 22

ments here are specifically about that model.

The casing for the Stylus Digital series is quite rugged, and can really take a pounding; in other words, if you drop the camera, it's not the end of the world. When not in use, the 3X optical zoom lens is protected behind a thick sliding cover. (Unfortunately this makes closing the lens cover a two-step process: slide the cover over until it touches the lens, and then finish closing the cover once the lens retracts fully. Admittedly, this is something many cameras feature, both digital and conventional, but it's still not as nice as cameras on which it's a one-step process.) Also, getting the camera into playback mode requires either shutting the lens and pressing the playback button on the rear of the camera, or tapping the same button twice in rapid succession while the lens is still open; either way is a bit awkward.

The camera makes use of xD camera media, which is the newer more compact memory favoured by Olympus and Fujifilm; a 16 MB card is included. The memory sits behind a weatherproof door on the right-hand side of the camera, but the door also hides the video out and the USB connector; what that means is that every time you want to download your images, you'll have to pry open the door. It's excellent for keeping water out of the connectors but it makes general usage a touch more inconvenient. One minor downside with the xD memory is compatibility—not many devices out there feature xD slots yet, so if you want to use the memory cards with external card readers or with printers, you'll have to spring for an adapter, which is an extra expense.

One nice touch with all Olympus cameras is that you almost never have to install a driver to get the camera connected to your PC, as your computer treats the camera like a generic external drive. This means that you can simply drag and drop your files from the camera to the PC (or vice versa); no proprietary client is required.

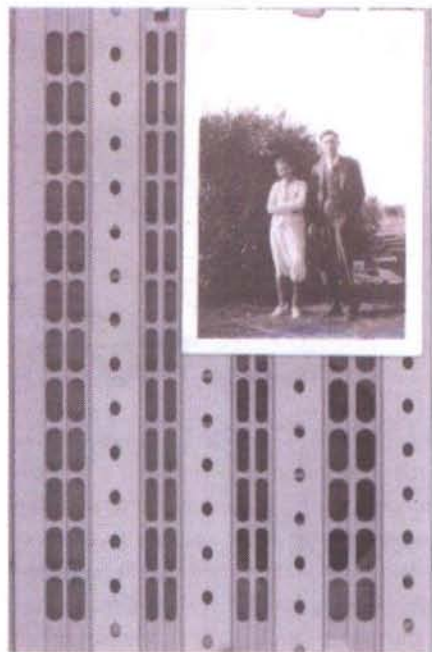
Those small issues aside, the Stylus Digital series is a winner: the pictures are great, the menu is powerful and fairly easy to use, and the casing is rock-solid. It even comes with a remote control for the shutter, so you can get into the picture yourself without running to beat the timer.

(The Stylus 400 Digital sells for \$799.) □

Breakthrough scanner

Continued from page 24

Photo and Imaging Gallery disobeys a number of standard software conventions. Cropping of an individual image, for example, involved selecting and pulling in the edges of each side of a photo to select the central part of the shot, then clicking the crop button to finish the task.



Did I mention it is noisy? It is constantly blowing air in and around your photos, which makes a fair racket. Think noisy photocopier and you will have an idea of the decibel level.

Conclusion

At \$379 after rebate, the HP ScanJet 5500c is a pricey but very innovative product. The included software needs more work. If you just have to get moving on your scanning project, buy it. If you're not in a hurry, wait for the second revision of this product. It is a great concept in need of some refinement.

The ScanJet 5500c is compatible with Windows 98, 2000, Me, and XP, as well as Mac OS 9.1 and OS 10.1 and up. Minimum system requirements for a PC are a Pentium II or equivalent processor with 64 MB RAM, and 300 MB available disk space. For a Mac, it requires a minimum of a Power PC processor with 64 MB RAM, and 150 MB available disk space. □

Douglas Alder was the original publisher and editor of *The Computer Paper* for 10 years. He is president of HomeBase Internet Publishing Ltd. in Vancouver, which specializes in FileMaker database application development. He can be reached at: www.hbase.net, 604-961-1069, or doug@hbase.net.

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Triple (and quadruple) threats

TCP Lab tests inkjet-based multifunction printers

By Sean Carruthers

When it comes to the inkjet printer market, the multifunction device is the fastest growing segment. That's not really surprising—more people are working from home regularly, whether it's a home-based business or they telecommute. In either case, the multifunction printer offers a very nice all-in-one bundle for those who need to do work from home. Why buy a printer, a scanner, and a copier when you can get all of them in a single (and much less expensive) piece of hardware?

For those who really want to throw themselves into things, many of these machines even come with built-in fax components, too.

The most popular, most basic configuration for a multifunction printer is the print/scan/copy trio. These three go together so well it's actually baffling that it took as long as it did for manufacturers to combine them. The printer is usually a reasonably standard inkjet print assembly, but the body is enlarged to include a scanner. Those two components, when integrated, make it very easy to make copies as well; while it was always theoretically possible to do this with separate scanners and printers, the multifunction units make it a one-touch operation, and (usually) a PC-free operation at that.

Sheet-feed vs. flatbed

The scanning component takes one of two forms: with a sheet-feed scanner, rollers pull the sheet of paper through the machine; with a flatbed model, you lay your sheet on a piece of glass, and the scanning unit moves across the sheet. Most earlier multifunction printers used a sheet-feed scan component, but those scanners were only able to handle single pieces of paper, not a book opened to a certain page or media of non-standard size or texture.

Multifunction printers using a flatbed-scanning component have gained a good percentage of the market, and no wonder: while they make for a larger overall design, they're much more



versatile, allowing you to scan whatever you can place against the glass. The big downside with flatbed models versus the sheet-fed style, is that if you have multiple pages to scan—or fax—you have to do them one at a time, or spend more on a flatbed model that has an automatic document feeder.

To fax or not to fax?

Another evolution of the multifunction printer is the faxing capabilities. Many early multifunction models featured a built-in fax component, but that began to tail off when people realized they could use the scanning component in conjunction with their PC's built-in fax modem. Dropping the fax component from these machines also meant a price drop, which was a nice bonus.

That tide may be turning on that trend, however, now that broadband is becoming the preferred method of getting onto the Internet. As dial-up becomes less popular, modems will start

to disappear from the standard PC configuration. At that point, more multifunctions may start to feature fax components.

Even if your PC has a fax modem, there are a couple of good reasons to pay extra for a multifunction with built-in fax: it's easier to send a fax directly from a fax machine-style printer; and you can send and receive faxes even when the computer is off.

This month, we looked at a few different types of multifunction printers. All of the models use inkjet technology, which means they're typically slower than laser-based models, but are also much less expensive and can copy and fax in colour.

Compact

Though multifunction printers already save space on the desktop, a growing number of models are even more compact. Here are a few of those newer machines.

Brother MFC-4420c

From: Brother Industries Ltd., www.brother.ca

Estimated price: \$399

Cartridge prices: \$35 (black), \$19 (ea. C, M, Y)



Brother's MFC-4420c is an impressive little unit: standing only 16 cm high through the body (about 32 cm with the paper support fully up), the fact that it manages to squeeze built-in fax capabilities into a machine that already has print scan and copy capabilities is impressive.

The inkjet-based, multifunction uses an innovative four-cartridge ink system that flattens the cartridges right out in order to keep the profile of the device smaller; the cartridges slot in just under the front lip of the printer, and ink is fed to the separate printhead inside. This configuration has a second advantage: there are no electronic components on the cartridges, which lowers their cost.

The machine's compactness wouldn't mean much if it wasn't up to its many tasks. Thankfully, it's a pretty impressive machine in that department as well. Its print output is a touch slower than some of the larger machines, but it's still quite good in draft mode. Print quality is also excellent whether you're using the machine as a printer or a copier.

You can do one-touch copying if you prefer, but you can use the menu system to adjust the quality and scaling (from 25 to 400 percent in 1 percent increments). Scanning to the PC is a bit more involved, but pretty easy; selecting your options from the printer opens up the scan/optical character recognition (OCR) application on the PC and saves it into the documents folder for that program. You'll definitely get better scanning accuracy by opening up the software first, however, and selecting

your options from there.

The built-in fax component bumps its price up, but for those who require PC-free faxing, it's a real plus. As with many other Brother fax machines, the MFC-4420c features a quick scan to memory feature, so you don't have to wait for the fax to go through at the other end before you can get your originals back. The machine will also fax in colour, using JPEG compression (the machine at the receiving end needs to have colour fax capabilities too, of course).

Adding to an already impressive package, this printer features slots for three types of digital camera media—Type II CompactFlash, MemoryStick, and SmartMedia—so you can print photos without having to turn on the PC.

Hewlett-Packard PSC 1210

From: Hewlett-Packard Co., www.hp.ca

Estimated price: \$200

Cartridge prices: \$30 (black), \$52 (tri-colour)



Battling it out for the honour of smallest all-in-one is HP's PSC 1210. At a glance, the Brother machine above, looks smaller—the scanning section stands only 13 cm off the desk—but when you measure the paper feed assembly, it's about 12 cm taller than the HP model. The PSC 1210 is also shorter in the other dimensions, which means that—optical illusions aside—it's the most compact multifunction machine we've seen. True, it lacks a built-in fax component, but it's still a very powerful little unit.

It looks deceptively basic, but has plenty of functionality: along the left of the flatbed scanning component lid is a row of buttons that include one-touch scanning or copying (in black or colour). The buttons offer most of the commands you need to scan or copy, but you have even more control by hooking it up to your PC, and making selections from the software. If you want to send a fax, you definitely need to have the PC powered up, because you can only send faxes via the PC's modem, as there is no

Continued on page 30

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Triple (and quadruple) threats*Continued from page 29*

built-in fax (you have to scan documents into the PC and send them out using a separate fax program).

The print quality on this machine is excellent despite the compact size. The main complaint here, if any, is that the machine's copying abilities are fairly limited: you can make a maximum of nine copies per original, and you're not given a lot of control over the copy from the machine itself (size options are 100 per cent or "fit to page"). If you only ever need to make basic copies, this machine will be fine, but for more complicated copy jobs you'll want to use the PC software.

Lexmark X1150

From: Lexmark Int. Inc., www.lexmark.com/canada
Estimated price: \$179

Cartridge prices: \$46 (standard black), \$30 (moderate-use black), \$50 (colour), \$35 (moderate-use colour)

Lexmark's X1150 is another very compact multifunction printer. It also has the lowest price point of the systems reviewed this month. Of course, its low price means a few compromises have been made. The main issue is that all of

its functionality, including copying, is host-based—which means it needs to be connected to a PC that is turned on.



That's a pretty serious drawback for some users, especially if the computer's busy doing other things—every time you make a copy, the software will engage and some of the computer's resources will be used.

That said, there are some really nice features to the X1150. First, is its compactness: if it wasn't for the paper support and the output tray, it would be one of the smallest machines of its type. Second, it communicates with the PC using USB 2.0 (which has a top data transfer rate of 480 Mbps versus standard USB at 12 Mbps)—probably a must with host-based copying. As well,

the software includes faxing capabilities, which means host-based faxing is more streamlined than other all-in-ones that require a separate program (an all-in-one with a fax component is still easiest, but a bit much to expect at this price).

Though a touch slower than the competition, the output quality for the X1150 is very good—technology from Lexmark's higher-end printers having drifted down to its lower-priced models—so you get great prints and high-quality copying. If most of your printing will be from the PC, this unit will be a good choice. Still, printer-based copying would have been a nice addition. As it stands, the X1150 offers very good value but more demanding users will want to look farther up the product line.

Mid-range

The majority of multifunction printers fit in this category. These models are, for the most part, the traditional size for multifunctions, and are priced mid-way between the compact and office-friendly ranges, with variations based on feature sets (fax capability and digital camera media slots, for example).

Canon MultiPass F20

From: Canon Canada, www.canon.ca

Estimated price: \$349

Cartridge prices: \$11 (black), \$29 (colour)



Canon's multifunction line has a few family members, and the MultiPass F20 is the entry-level model. While it's the only member without a fax component, it still has a lot of great features, including the ability to read and print directly from digital camera media of any type, as long as you have a PC Card adapter for your type of memory card (it ships with a Type I CompactFlash adapter).

It's pretty easy to do an index print, though selecting individual images is a bit tougher using the menu system. Both photo printing and copying produce

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Asus A7N8X nForce2-ST/333FSB/8xAGP/3xDDR400/Socket A/ATA133/USB2.0 \$159
Asus A7N8X-DX nForce2-ST/333FSB/8xAGP/3xDDR400/Socket A/SATA/USB2.0/LAN \$189
Asus A7V8X-X K400/333FSB/8xAGP/3xDDR400 Socket-A/ATA133/audio \$95
Asus P4G8X-DX iE7205(Hyper Threading) \$239
Asus P4B800-DX iE7205/Hyper Dual Channel DDR400 -S-478/Audio/USB2.0/Lan/1394 \$279
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Asus P4P800-DX 1865PE(HIT)/800FSB/8xAGP/1394 USB2.0/Audio/Gigabyte/Lan/Raid/ATA100/SATA/DDR \$209
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Aopen DV-D-R/RW IDE Drive \$289
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Pioneer 105/A05 4x DVD-R \$289/305
Sony DWU-104A(500X OEM) DVD-RW \$419
Sony DWU-104-BK (500X OEM) DVD-RW \$469
Lite-On 400D 4x DVD+R/R DVD-RW Drive \$389

CPU & MEMORY

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144pins 512mb SODIMM P-133(Notebook) \$179
200pins 128/256/512 MB DDR (Notebook) \$45/69/179
SMART MEDIA Flash Card 64/128 \$39/55
Compact Flash 64/128/256/512MB \$39/55/85/170
MultiMedia Card 32/64/128MB \$38/48/85
Secure Digital 64/128/256/512MB \$45/75/109/379
N-D-Picture Card 32/64/128mb 45/60/95
OEM Memory Stick 64/128 MB \$55/75
Sony Memory Stick 64/128 MB \$75/129
Sony Memory Stick DUO 64MB \$139
Hard Floppy /USB Drive
Seagate 23AS /13AS SATA 80Gb 7200rpm \$179/189
Seagate 23AS /26AS SATA 120Gb 7200rpm \$205/215
WD 360GD 36GB SATA 1000RPM \$215
Maxtor 40/60GB ATA133 7200RPM \$85/109
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WD 80/120GB ATA100 7200RPM(RMB Buffer) \$135/179
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ASUS +950TD FX-5200 128mb DDR 8xAGP+TVO \$135
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ATI AIW 9000Pro 64mb DDR & Remote box \$269
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Aopen Fx800 8xAGP 128MB DDR TVO/DVI \$529
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Logitech Optical wheel mouse PS2/USB \$23
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Creative SB LIVE 2 VALUE 5.1 \$49
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Samsung 753DF 17"1280x1024 .20(h) \$195
Samsung 763MB 17"1280x1024 .20(h) Magic Bright \$229
Samsung 955MB 19"1600x1200 .20(h) Magic Bright \$339
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SAMSUNG 152B/152T 15" LCD (silver/black) \$505/585
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Canon Optura 10/20/200MC miniDV \$999/1199/1559
Casio EXS2 2 megapixel /EXS3 3 megapixel \$389/479
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Monitor - CRT (Pure Flat)

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MAG innovation 996PF 19" \$255
AOC 7F 17" 1280X1024/25mm \$169
AOC 9K1R 19" 1600X1200/25mm \$265
LG 17" Flatron F700B / F700P 24 1280x1024 \$239/275
LG 19" Flatron F900B /F900P 24 1600x1200 \$409/429
Hansol 730ED 17" 1280x1024/20mm(h) \$169
Samsung 753DF 17"1280x1024 .20(h) \$195
Samsung 763MB 17"1280x1024 .20(h) Magic Bright \$229
Samsung 955MB 19"1600x1200 .20(h) Magic Bright \$339
Monitor - LCD
ACER AL512 15" w/speaker(w/550 mail-in Rebate) \$395
ACER AL716 17" 500:1 w/SPK(w/550 mail-in rebate) \$569
BenQ FP767 17" 500:1 \$519
LG L1511S /L1511SK 15" Flatron (Black) \$419/419
LG 76GLS 17" Flatron LCD Panel \$639
AOC Lm520 15" TFT LCD Panel \$389
AOC Lm720 17" TFT LCD Panel \$539
MAG L1665 15" LCD Panel \$359
MAG L1765 17" LCD Panel \$539
Impression SLSP 15" LCD 400:1 Panel \$389
Impression 7LSP 17" LCD 400:1 Panel \$529
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SAMSUNG 152B/152T 15" LCD (silver/black) \$505/585
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SAMSUNG 172B/172T 17" LCD silver \$759/875

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Aopen/BenQ 52X24X52X CD/RW Drive IDE \$59
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Aopen Fx5200 8xAGP 128MB DDR TVO/DVI \$119
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We're HERE

Triple (and quadruple) threats*Continued from page 30*

excellent results, as does printing from the PC.

There are a few issues with the printer's menu system, however. The first is mostly an unfortunate design choice: whenever the printer is shut off, it defaults to black-and-white mode when it's restarted, which means you have to change it back to colour before doing colour copies. (While this is probably based on the assumption that most documents will be printed in black, it would be nice if the menu system remembered settings at shutdown, so you wouldn't have to change them every time.)

Secondly, pressing the photo card button by mistake caused problems: the machine would not cancel this menu request until either the photo card was inserted or the printer turned off.

Once you get past these glitches, however, it's pretty smooth sailing. The software setup is straightforward, and the toolbar is easy to use. In the end, the MultiPass F20 is a very good multifunction printer with a couple of control panel annoyances that keep it from being truly excellent.

Epson Stylus CX3200 / CX5200From: Epson America, Inc., www.epson.com

Estimated price: \$279/\$349

Cartridge prices CX3200: \$47 (black), \$47 (colour)

Cartridge prices CX5200: \$52 (black), \$19 (C, M, Y)



At the time of our testing, Epson had two multifunction printers in its lineup. The Stylus CX3200 is the more value-oriented of the two; even so, it's a fairly full-featured model, with one-touch copying (with a separate button for colour and for black and white copies), scanning, and high-quality printing. The Stylus CX5200 is the more business-oriented unit. Though it looks similar, it has a faster print engine, better resolution, and uses DuraBrite ink in four separate ink tanks for maximum ink efficiency. (Epson claims images and documents printed with DuraBrite ink and

compatible paper will resist fading for up to 80 years.)

Both printers feature an LCD menu system on the top panel, that offers a fair amount of control over document output. Copying documents is PC-free, with a number of scaling options, mostly listed as scaling from one paper size to another. Print quality from both machines is exceptional, with 5,760 dots per inch (dpi), horizontally.

You'll definitely get a lot more out of these machines using the included software, which, happily—as neither model has a built-in fax component—integrates with your existing fax software. Whether you're planning to use them mostly for printing or copying, they are both pretty solid machines. For those who want longer-lasting documents and don't want the hassle of throwing out a tri-colour cartridge when just one colour runs dry, the CX5200 is worth the extra investment.

Hewlett-Packard PSC 2210From: Hewlett-Packard Co., www.hp.ca

Estimated price: \$450

Cartridge prices: \$30 (black), \$52 (tri-colour), \$38 (photo)



If you're considering an HP multifunction, and are not that concerned about ultra-compactness, add 1000 to the PSC 1210 and choose the 2210 model instead. It sports a bigger footprint, a bigger price tag, and a bigger array of functionality.

One of the reasons it costs more than many other units this size is its digital photography features: slots for digital camera media (Type II CompactFlash, SmartMedia, SecureDigital, and MemoryStick); and an innovative use of the scanner component in conjunction with these cards. After inserting a card and pressing a few buttons, you can make a series of index prints, each of which has

*Continued on page 36***50% OFF Shipping On All Same Day Winning Lots*****Inkjet Cartridge - Save 70%!**

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CDR Media CDR 80Min 48X 50 Packs Start Bid \$1	Linksys USB Hub Netline USB 10/100 Ethernet NEW - Start Bid \$1
EPSON Color Inkjet USB C62UX NEW - Start Bid \$1	LG 52x24x52 CD-RW Burner+Burn Proof+Nero Start Bid \$1

IBM PII360 Desktop 64MB + 4GB + LAN Start Bid \$109	ASUS D1 15" TFT Barebone Desktop P4/DVD/CD-RW Start Bid \$995	(Check online for full listing - eg. HP) Epson (Min. Qty 3) Photo 750 Color \$11 440/670/740 Color \$9.33 440/670/740 Black \$7.66 640/860/1160 Color \$9.33 740/860/1160 Black \$9 Stylus 880/880i Black \$9.33 C42UX Color \$16 C50/C60 Color \$13.66 C60 Black \$13.33 C80 Black \$19.66 Canon (Min. Qty 3) 2000/4000/5000/400 Color/Black \$7.33 3000/6000/S400/S600 Color \$9.33			
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NEW Computer System <table border="1"> <tr> <td> Intel P4 2.4GHz 533FSB 256Mb DDR266 PC2100 ECS P4VMM2 Board Maxtor 40Gb 7200RPM LG 16X DVD-ROM Floppy, Keyboard, Mice USB 2.0/Network/Sound Start Bid \$559 </td> <td> AMD Athlon XP2000 256Mb DDR266 PC2100 ECS Board w/USB 2.0 Maxtor 40Gb 7200RPM LG 16X DVD/56k Modem Floppy, Keyboard, Mice Network Ready Start Bid \$ 499 </td> <td> AMD Athlon XP2200 256Mb DDR266 PC2100 ECS Board w/USB 2.0 Maxtor 60Gb 7200RPM 52x24x52 CD-RW Burner Floppy, Keyboard, Mice Ethernet/Sound/Speaker Start Bid \$499 </td> </tr> </table>			Intel P4 2.4GHz 533FSB 256Mb DDR266 PC2100 ECS P4VMM2 Board Maxtor 40Gb 7200RPM LG 16X DVD-ROM Floppy, Keyboard, Mice USB 2.0/Network/Sound Start Bid \$559	AMD Athlon XP2000 256Mb DDR266 PC2100 ECS Board w/USB 2.0 Maxtor 40Gb 7200RPM LG 16X DVD/56k Modem Floppy, Keyboard, Mice Network Ready Start Bid \$ 499	AMD Athlon XP2200 256Mb DDR266 PC2100 ECS Board w/USB 2.0 Maxtor 60Gb 7200RPM 52x24x52 CD-RW Burner Floppy, Keyboard, Mice Ethernet/Sound/Speaker Start Bid \$499
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Works with PS2, DVD VCR

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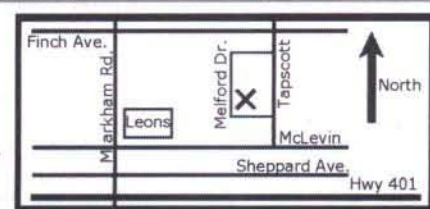
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Duron System

AMD Duron XP1800
ECS K7SOM+ Motherboard
256MB DDR RAM
3D Video 32MB shared
Maxtor 30G Hard Drive
Panasonic Floppy Drive
10/100 Ethernet, **USB2.0**
LiteOn 52x CD Drive
3D Audio, Speakers 250W
Alpha 17" Case 300W
Keyboard & Scroll Mouse

\$288.00

P4Celeron System

P4 Celeron 2.0G CPU
ECS P4VMM2 Motherboard
256MB DDR RAM
3D Video 32MB shared
Maxtor 40G(7200)Hard Drive
Panasonic Floppy Drive
10/100 Ethernet, **USB2.0**
LiteOn 52x CD Drive
3D Audio, Speakers 250W
Alpha 17" Case 300W
Keyboard & Scroll Mouse

\$368.00

XP System

AMD Barton CPU 2500+
ECS L7S7A2 Motherboard
256MB DDR333 RAM
GeForce4 MX440SE 64M Video
Maxtor 80G(7200)Hard drive
Panasonic Floppy Drive
10/100 Ethernet, **USB2.0**
LiteOn 52x CD Drive
3D Audio, 250W Speakers
Alpha 17" Case 300W
Internet Keyboard, Scroll Mouse

\$488.00

Power System

Intel Pentium4 2.66GHz
Asus P4S533-X Motherboard
256MB DDR333 RAM
GeForce4 MX440SE 64M Video
Maxtor 80G(7200)Hard drive
Panasonic Floppy Drive
10/100 Ethernet onboard
LiteOn 52x CD Drive
3D Audio, 250W Speakers
Alpha 17" Case 300W
Internet Keyboard, Optical Mouse

\$638.00

Barton System

Athlon Barton CPU 3000+
Asus A7N8X Deluxe Motherboard
Dual Channel DDR400 512M
MSI FX5200 128MB 8xAGP
Maxtor 80G(7200)Hard drive
Panasonic Floppy Drive
LG 52x24x52 CD Burner
6 channel 3D Audio onboard
AltecLancing AVS300 speaker
Alpha 17" Case w/350W
MS Multimedia KB, Optical Mouse

\$1088.00

Professional System

Intel Pentium4(800FSB) 3.0GHz
Asus P4C800 HyperThreading
Multi-RAID Motherboard
Dual Channel DDR400 512MB
ATI Radeon 9500Pro 128MB, 8xAGP
WD 80G(7200)Hard drive 8M Cache
Sony 16x DVD, Sony 52x CDRW
Floppy, Ethernet & 6 channel audio
AltecLancing AVS300 speakers
Alpha 17" Case w/350W
Microsoft Mltimedia KB, Optical Mouse

\$1598.00

You may make following upgrades to your system package:

256MB DDR266 Ram -> 512MB \$37
30G -> Maxtor 40G hard drive \$10
40G(7200) -> Maxtor 80G(7200rpm) hard drive \$30

You may add following options to your System:

Add: 56K Faxmodem \$18
LiteOn 52x24x52 \$57
Install Redhat Linux OS & Office \$29

***** The Legend Continues ***** The Legend Continues ***** The Legend Continues ***** The Legend Continues ***** The Legend Continues ***** The Legend Continues ***** The Legend Continues ***** The Legend Continues ***** The Legend Continues *****

HARD DRIVE Specials

Maxtor 40GB(7200rpm) \$78
Maxtor 80GB(7200rpm) \$106

Wireless Specials

BenQ wireless USB Ethernet adapter 43
SMC Wireless Router w/Print Server 78

LCD MONITORS Specials

17" Mag HD772 LCD, scratch-resistant \$529
18.1" Philips 180B LCD monitor \$775

DVD/CDRW Specials

LG combo 16x DVD/48x24x48CDRW \$84
LG 52x24x52 CDRW w/Software \$57

HARD DRIVE & STORAGE

For Notebooks: Toshiba 20/30/40G 127/155/169
Maxtor(7200) 30/40/80/120GB 69/78/106/147
WD(8M Cache) 80/120G 127/185
Serial ATA Seagate 80/120G 179/245
USB Flash drive 64M/128/256M 39/59/99
Portable 2.5"USB Hard drive 20/30/40G 169/199/219
Portable 3.5"USB Hard drive 60/80G 185/195

Controller Cards

ATA133 IDE Card, Promise 69
ATA133 IDE RAID Card, Silicon-Image 47
ATA133 IDE RAID Card, Promise 135
Firewire: Tekram/Sunix 35/27
SCSI Adaptor TecRam 395U/395UW 53/76
PCI USB Adaptor Ver1.1/Ver2.0(NEC) 14/24

VIDEO Card & TV TUNER

ATI All-in-wonder Radeon9700Pro 128M(Retail) 579
ATI Radeon 9800Pro 128M(retail) 569
ATI (OEM) Radeon7000 64M Dual SDR/DDR 49/59
ATI (OEM) Radeon7500 64M Dual SDR/DDR 66/76
ATI(OEM) Radeon 9000 64M/128 DVI 89/106
ATI(OEM) Radeon 9000Pro 128M DVI/VIVO 145/159
ATI(OEM)Radeon 9200 8xAGP 128M DVI/VIVO 125/139
ATI(OEM)Radeon 9500Pro 8xAGP 128M 259
ATI(OEM)Radeon 9700Pro 8xAGP 128M DVI 519/549
GeForce2 MX400 64M/64M+TV 49/63
GeForce4 MX440SE 64/128MB 59/77
GeForce4 MX 440 128MB 8xAGP DDR+TV 95
GeForce FX5200 8xAGP 128MB DDR+TV 108
MSI FX5200 8xAGP 128M VIVO w/Remote 157
MSI GeForce4 MX440 8xAGP 64/128M 86/135
MSI GeForce4 Ti4200/Ti4800 8xAGP128M VIVO 209/239
PowerColor FX5200/FX5600 8xAGP128M DVI 115/239
PowerColor GeForce4 Ti4200 8xAGP128M DVI 195
PCI: GeForce4 MX440se 64M 79
TV Wonder by ATI, (retail) PCI/USB 102/125
TV Tuner with capture, FlyVideo 2000/3000 48/59

CASES/Power Supply

4" Booksize case for P3 & P4 Beige/Black 76/76
ATX Tower for P4: 17"/19"/24"/27" 29/69/99/199
Aluminum Case 17"/18" 105/169
with USB, Firewire, audio ports(PS extra)
19" Rackmount Case 1U w/300WPower Supply 329
19" Rackmount Case 4U (Power Supply extra) 169
Power Supply for P4: 400/450W 75/99
Enermax PS 300W/350W 52/75

CPU

(For latest prices, please visit: http://www.cancomputer.com)

MEMORY

(For latest prices, please visit: http://www.cancomputer.com)

NETWORKING

Bluetooth USB adapter D-Link DBT120/OEM 64/54
Ethernet card: Intel8460C/DLink538 48/14
Ethernet card: SMC/AOpen/Realtek OEM 9/14/9
PCMCIA Ethernet 32bit: Surecom/DLink 35/56
10M Hub: 5 ports/8 ports 17/19
10/100 Switch: 5/8/16 ports 26/39/89
10/100M Switch: DLink 5/8/24 ports 45/65/169
Router 4port: DLink DI 604/704P 52/77
Router 4port: SMC7004VBR 56
Wireless Cardbus: SMC2632W/DLink DWL650+ 57/59
Wireless USB Adapter: OTC/Linksys WUSB11 49/79
Wireless PCI Adapter:DLink DWL520+ 75
Wireless Router: DLink DI614+/Linksys BEFW11S4/ SMC7004AWBR 115/115/78
Ethernet cable 6'/10'/14'/25'/50'/75'/100'/1000' 5/7/8/9/12/16/19/65

PRINTER

Canon i320/i550 75/169
Epson C62/C82 99/179
Lexmark E210, Laser 249

Scanner

Acer4300/5000U/5300U 59/94/105
Epson 2400Photo 279

Keyboard/Mouse

Keyboard: Foldable Flexi, water resistant 29
Keyboard: Win98/Multimedia/Logitech Internet 8/12/19
Keyboard: Japanese/Korean/Chinese/Russian... 18
Mouse: Scroll/Optical/Logitech Optical 6/14/16
MS MltMdia Keyboard & Optical mouse(w/sys) 39
MS Natural MltMdia Keyboard & Optical mouse(w/sys)49
Wireless Mouse: A4 Rechargeable Optical 43
Wireless Mouse: Logitech Optical 39
Wireless Keyboard & Mouse: Ergonomic Optical 69
Wireless Keyboard & Mouse: MS Desktop (w/sys) 75
Wireless Keyboard & Mouse: Logitech Elite Duo 109

MOTHERBOARDS

ASUS P4S533-X/P4S533-MX 87/95
ASUS P4SDX/P4C800 Deluxe 159/275
ASUS A7S333 87
ASUS A7N8X/A7N8X-Deluxe 158/185
ASUS A7V8X-X/A7V8X WL1394 95/153
ASRock P445D, i845D, Hyper-Threading 85
ECS L7S7A2 8xAGP/K7S5APro 79/69
ECS L7VMM2 with Video, Audio, LAN 82
ECS K7SOM+ with 1800 Duron CPU 117
ECS P4VMM2 Ver5 74
Gigabyte 8PE800/8SQ800 113/129
Gigabyte 7VAX-A/7VAXP-A-Ultra 115/179
Intel ServerBoard SE7501BR2 759
Shuttle SB51G P4 Aluminum system 415

MONITORS

LCD 15" Mag HD572 Scratch-resistant 355
LCD 15" Philips 150S (Beige) 359
LCD 15" Samsung 151SBeige/Silver 389/399
LCD 17" BenQ FP767 fast response 509
LCD 17" Mag HD772 Scratch-resistant 529
LCD 17" Samsung 171S, Beige/Silver 599/609
LCD 18" Philips 180B, 4-year warranty 775
LCD 19" Samsung 191N, Silver 959
17" Envision E710E/Acer AC711 0.27dp138/145
17" LG E700B Flat Screen.25dp,1280x1024 175
17" Mag Innovation Pure Flat .25dp,1600x1200 166
17" NEC AS75F Flat 0.25dp 189
17" Samsung 750S/753DF 163/183
19" AOC 9K1r 0.25dp 269
19" LG F900B/F900P, True Flat 389/415
19" Mag Innovation Pure Flat .25dp,1600x1200 248
19" Samsung 955DF 299

Multimedia

Creative WebCamPro/Logitech QuickCamWeb 54/49
ORite iWebCam 640x480 w/Mic 37
FM Radio Broadcaster 32
MP3 Player with Memory Card Reader+32MB 85
MP3 walkman & USB drive 128M/32M 155/83
Compact Flash / Smart media Card 128MB 52/59
Multi-media Card 64/128M 43/79
Memory Stick for Sony 64/128M 57/92
USB Multi-Slot Card Reader, internal/external137/37

CD-ROM & Floppy

52x Sony/MSI/LG/LiteOn 29/24/24/24
CDRW with Software: -
LG/Liteon/Mitsumi 52x24x52 57/57/57
Sony 48x12x48/52x24x52 58/65
Portable AOpen CDRW 52x24x52 USB2.0 145
Portable LiteOn CDRW 48x24x48 USB2.0 135
Combo Drive: LG 4480B DVD/CDRW 84
DVD 16x LiteOn(with S/W) 45
DVD 16x AOpen/LG(Drive only) 45/45
DVD 16x Sony/Pioneer(Drive only) 48/54
DVD RW LG GMA-4020B 215
DVD RW Sony DWU10A/DRU-510A 419/558
1.44MB Floppy Drive, internal/external 13.8/55

Sound

3D sound card/Audio Excel 5.1 Theatre 14/22
AOpen AW840/AW850/AW540Deluxe optical 18/28/49
SB Live5.1/Audigy 46/92
Audigy2(OEM)/Audigy2 Platinum 109/235

Speakers:

180W/Juster 2.1 Silver LED 7/46
Altec Lancing AVS300/ATP3 34/83
AOpen 805/810/915/Titanium 26/48/89/76
Creative Inspire4400/Inspire5200 62/89
Telex Microphone/Stereo Headphone 7/14
Dynamic Headphone XBase-vibration 26

FAX/MODEMS

56K FaxModem 18
AOpen 56K FaxModem SV/PLX 19/32
Hardware FaxModem: SmartLink/USR 57/79
External FaxModem AOpen(hardware) 99

Accessories/Drive Enclosure

Front panel for USB, Firewire & audio ports 18
External Drive Enclosure
Parallel/USB 3.5" or 5.25" 69/79
2.5" USB2.0 for Notebook Hard drive 39
5.25" Firewire/Firewire & USB Combo 89/119
H.D.mobile rack ATA133 1 fan/3 fan 14/22
Linksys KVM Intelligent Switch Box 2-ways 56
Push-button Switch Box(w/cables) 2/4 ways 55/99
USB 4Port Hub 15
CDR40x(50pc) 18
DVD-R 1x/2x/4x(all 2pc) 4.8/6.8/9.8
DVD-RW 1x (2pc) 11
CPU Fan: CP5-6131C/CoolJag352A 12/17



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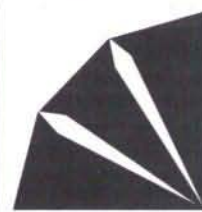
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TCP Test Lab: Multifunction devices

	COMPACT			MID-RANGE					OFFICE-FRIENDLY		
	Brother MFC-4420c	Hewlett-Packard PSC 1210	Lexmark X1150	Canon MultiPass F20	Epson Stylus CX3200	Epson CX5200	Hewlett-Packard PSC 2210	Lexmark X5150	Brother MFC-5200c	Hewlett-Packard OfficeJet 6110	Lexmark X6150 / X6170
Print											
Max. print resolution (dpi)	2,400x1,200	4,800x1,200	4,800x1,200	2,400x1,200	5,760x720	5,760x1,440	4,800x1,200	4,800x1,200	2,400x1,200	4,800x1,200	4,800x1,200
Max. print speed: black (ppm)	13	12	14	14	14	22	17	19	20	19	19
Max. print speed: colour (ppm)	11	10	8	10	10	11	12	14	16	15	15
Input capacity (sheets)	100	100	100	100	100	150	100	100	100	100	100
Monthly duty cycle (pages)	2,500	1,000	2,000	not listed	not listed	not listed	3,000	5,000	2,500	3,000	5,000
Connection to PC	USB 1.1	USB 1.1	USB 2.0	USB 1.1	USB 1.1	USB 1.1	USB 1.1	USB 1.1	USB 1.1, parallel	USB 1.1	USB 2.0
Scan											
Optical scan res. (dpi)	600x2,400	600x1,200	600x1,200	600x1,200	600x1,200	1,200x4,800	600x1,200	600x2,400	600x2,400	1,200x4,800	1,200x4,800
Max. enhanced scan res. (dpi)	9,600	19,200	9,600	9,600	9,600	9,600	19,200	19,200	9,600	19,200	19,200
Scan configuration	flatbed	flatbed	flatbed	flatbed	flatbed	flatbed	flatbed	flatbed	flatbed	flatbed	flatbed
Colour scanning depth	36-bit	36-bit	48-bit	36-bit	48-bit	48-bit	48-bit	48-bit	36-bit	48-bit	48-bit
Copy											
Copy speed: black (cpm)	10	12	13	14	10	15	17	16	15	19	16
Copy speed: colour (cpm)	6	not listed	5	10	not listed	not listed	12	11	12	14	11
Max. number of copies at once	99	9	99	99	99	99	99	99	99	99	99
Reduction/enlargement (%)	25-400	50-400	25-400	25-400	NA*	25-400	25-400	25-400	25-400	25-400	25-400
Fax											
Built-in modem	14 Kbps	no	no	no	no	no	33.6 Kbps	no	33.6 Kbps	33.6 Kbps	33.6 Kbps
Colour faxing capability	yes	N/A	N/A	N/A	N/A	N/A	yes	N/A	yes	yes	yes
Cartridge configuration	CMYK	black & colour	black & colour	black & colour	black & colour	CMYK	black & colour	black & colour	CMYK	black & colour	black & colour
Cartridges included	CMYK	black & colour	black & colour	black & colour	black & colour	CMYK	black & colour	black & colour	CMYK	black & colour	black & colour
Windows compatibility	98/Me/ 2000Pro/XP	98/Me/ 2000/XP	98/Me/ 2000/XP	98/Me/ 2000/XP	98/Me/ 2000/XP	98/Me/ 2000/XP	98/Me/ 2000/XP	98/Me/ 2000/XP	95/98/NT/ Me/2000/XP	98/Me/ 2000/XP	98/Me/ 2000/XP
Mac OS compatibility	8.6-9.2, 10.1, 10.2.1+	9.x, 10.1+	9.2.2 (w/CarbonLib), X	None	8.6-9.x	8.5.1-9.x	9, X	9.2.2, 10.1.5	8.5, 8.5.1, 8.6-9.2 plus	9, X	no
Warranty period	one year	one year	one year	one year	one year	one year	one year	one year	one year	one year	one year
Dimensions, WxDxH (cm)	39.9x47x16.2	42.5x25.9x17	44.5x30.7x16.3	39.6x53.6x27.7	47.5x38.9x23.5	45.2x43.4x25.4	46.2x37x22.1	39.5x46.9x24	49.3x46.5x37.8	49.5x39.4x30	50x43.9x24.1**
Weight (kg)	7.98	4.31	4.08	7.62	7.26	9.07	8.14	8.32	12.97	10.89	9.98/11.29

* Scales from other sizes. **X6170 dimensions (cm): 50x43.9x29.7

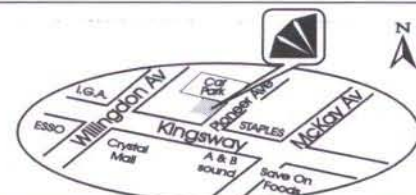


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10Base 8port hub	\$25	Imada 15" LCD w/spk	\$350	HP laser 1300	\$540
LG DVD/CDRW Combo 16x48x24x48 oem w/nero			\$85	MiniCase CD-100 wPS\$68	

ACCESSORIES/CASE/CPU

15"AT/18"ATX/18" ATX USB / P4 300W	\$27/30/35/43
Most Extension cables 6'	\$5
ATA 100 mobile rack /ALUM Rack / CPUs	\$18/45/call

DISKS/DRIVES/CDROMS

FDD / 250M ZIP DRIVE	\$14/125
maxtor 7200rpm-40 / 60 / 80	\$85 /110/116
WD 80G 8M / 120G 8M	\$158/185
LG 52X / Aopen 56x	\$30/30
LG 16X DVD	\$50
LG 16 x48 DVD-CDRW COMBO	\$85
CDRW: LG 52x, Liteon 52x/AOPEN 52X	\$60/65 / 55
DDR-RW: LG, SONY	\$236 /548

KEYBOARD/MOUSE

Win98 keyb / MS Internet keyb / Elite keyb	\$8/26/28
Logitech wheel mouse Ps2 / Logitech Optical	\$12/20
Logitech Cordless optical keyboard & mouse	\$129
MS Intellimouse Ps2 / MS Optical / basic mouse	\$20/20/5

MEMORY/MODEM/MONITOR

PC133: 128/256/512/ RIM: 128/256	\$28/45/89 / 60/112
DDR2100: 128, DDR 2700: 256/512	\$33/45/82
DDR3200: 256 / 512 / Aopen PCI 56SVV	\$60 /109 /20
USR PCI-SW-VOICE/HW VOICE	\$40/95
AOC/F/AOC 19" 9G/9K	\$169/230/280

Samsung 750S / 753DF/955DF	\$180/189/330
Viewsonic E70F/E90F / NEC1560V	\$258/380/420
Mag 15" LCD /Mag 17" LCD	\$395/530

MOTHERBOARD/NETWORK

ASUS A7V333 WA / A7N266VM-WA	\$90/105
GIGA 7VAXP / GIGA 6VXTX-A	\$140/88
INTEL: ASUS P45533-MX / -X	\$99/109
ASUS P4B533 / P4PE-L	\$140/148
GIGA 8IE800 / 8IK1100	\$104/200
ECS P4VM2+ / P455MGGL+	\$80/98
ECS K7SEM 1800+ / 256M / PCCHIPS 8310	\$150/120
ECS K755A PRO	\$80
10-100 NIC / 10BASE T HUB: 5 / 8P	\$10 / \$25 / 30
10-100 BASE T SWITCH: LINKSYS SP/ 8P	\$70 / 98
4P-ROUTER: LINKSYS / DLINK604 / 704	\$99 / 69 / 85
Network cable RJ45-10' / 25' / 50' / 100'	\$4 / 7 / 12 / 22

PRINTER/SCANNER

CANON I320/S330	\$94/105
EPSON C42 / C62 / C82	\$69 / 99 / 195
LEXMARK Z35/Z45	\$70/99
LEXMARK Z55/K75/X85	\$145 /145/195
HP1300/HP 1000	\$545/320
HP3420V/3820/5550/6122	\$115/148/200/280

EPSON 1260 / 1260PHOTO	\$128/150
EPSON 1660PHOTO	\$220
Hp3500 / 35700 / 4570C/5500C	\$129/190/285/440

SOUND/VIDEO/SPEAKER

CREATIVE PCISb128/SB Live 5.1	\$28/49
Audigy oem / Audigy 2 / Audigy Plat.2	\$100/115/285
ATI Rad 7500 / 8500LE128M/ 9000 single	\$105/165/125
ATI Rad 9000 dual/9700pro 128m dual	\$145/540
ATI AIW Rad 7500 64M DDR/8500DV 64M	\$199/260
TNT2-32M / Gf2 Mx400 64M / Gf2 Mx400 64M TV	\$48/55/59
MSI Gf4 Ti4200 128M	\$195
Gf4 Mx440 4X 64M / 8X 128M AGP	\$68/105
MSI Fx5200 128M	\$156
100W/180W/AOPEN 805/ 810	\$8/18/25/40
ACS 33 /ATP3/AVS200/300/500	\$60/95/26/40/60
CREATIVE INSPIRE 2500/4400/6600	\$65/ 70/139

NOTEBOOK/FURNITURE

Norton antivirus 2003 oem/Winfax pro 10	\$20/30
WorkSuite 2003 / Panywhere 10.5	\$100 / 30
Simply accounting pro 8.5	\$139
Frontpage 2002/office xp pro / office xp sbe	\$239/475/265
WIN98SE / WIN XP home/ XP pro	\$130 / 130 / 200

AMD-VALUE

Mainboard, 128-PC133
max 64M AGP & 3D Audio
56K Modem, LAN, FDD,
40G/7200rpm HDD
18" 300W USB, 52X CDROM
98 Keyb, Wheelmouse, Pad
100W Speaker

Duron 1.16/1.26	\$379/896
Duron 1.36	\$395
T-8 1.36	\$409
XP-1800+	\$429
XP-2000+	\$449
XP-2200+	\$469

AMD-POWER

Mainboard w/sound, 256M
TNT2 32M, Lan, FDD
56K Modem, 40G/7200rpm
18" ATX 250W, 52X CD
98 Keyb, Wheelmouse, Pad
500W Subwoofer Speaker

Duron 1.16 / 1.26	\$456/462
Duron 1.36	\$468
TB-1.36	\$479
XP-1800+	\$499
XP-2000+	\$509
XP-2200+/2400+/519/539	

INTEL-VALUE

Mainboard, 128-PC133
max 64M AGP & 3D Audio
56K Modem, LAN, FDD,
40G/7200rpm HDD
18" 300W USB, 52X CDROM
98 Keyb, Wheelmouse, Pad
100W Speaker

CEL 1.26/1.36	\$399 / 409
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ECS DESKNOTE

A901: VIA 1G PRO, 8X DVD,
256M, 10G \$1060
A928: 15" TFT, DVD, USB2,
1394 \$950
A928: 15" TFT, DVD-CDRW,
USB2, 1394 \$1050

ECS NOTEBOOK

barebone

G732: 15" Combo, ATI 64M
P4-notebook \$1240
G733: 15" XGA, Combo
P4-notebook \$1120
G732E: 16" XGA Combo,
ATI 64M, P4 \$1450

MINI Q barebone

\$400

1800+ SUPER SYTEM \$328

Mainboard with cpu, video, sound, lan on board
128M pc133, FDD, 40G/7200rpm HDD, 52X CDROM
18" 300W USB, 98 Keyb, Wheelmouse, Pad, 100W Speaker

P4-VALUE

Mainboard w/sound
128M DDR, onboard VGA
56K Modem, FDD, LAN
40G/7200rpm HDD
ATX 300W USB, 52X CDROM
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Triple (and quadruple) threats*Continued from page 32*

a series of check boxes. Tick off the thumbnails you want prints of, scan the index sheet, and it automatically prints full-size images of your selections, with sizing and border options you choose.

Of course, the printer also does all of the usual stuff a multifunction should, including PC-free copying, printing from the PC, and scanning images to the PC. The PSC 2210 also has a fax component, which only adds to its overall value. That, along with its excellent print quality, makes it definitely worth consideration despite the higher cost.

Lexmark X5150

From: Lexmark Int. Inc., www.lexmark.com/canada
Estimated price: \$249

Cartridge prices: \$53 (black), \$60 (colour), \$74 (high-yield colour)

While Lexmark recently introduced a number of multifunction printers that push the price point down, the attractively priced X5150 has already been out for a few months.

The onboard menu system is very powerful, giving you full control over image printout, including quality, dark-

ness, number of copies, and even seemingly obscure tasks like printing to a t-shirt transfer. On pressing the scan button, you can select the application (including Internet Explorer, Notepad, and Lexmark's photo editor) into which you want to open the scan, which is exceptionally powerful. You even have the option of sending your scan via fax (a fax program is included in the software bundle), even though no fax capabilities appear on the printer itself. Even if a lot of these options aren't exactly one-touch, the X5150's menu system is still one of the nicest we've seen.



Its print quality is every bit as good as the menu system, with excellent prints and great copying capabilities. The

X5150 is also one of the faster black and white printers in this price range, at up to 19 pages per minute. All in all, it's a great combination: expansive features, good speed, and low price.

Office-friendly

Though big offices will probably have separate fax machines, laser printers, and the like, smaller offices may still have a use for an all-in-one multifunction machine, especially for faxing. These models will usually be faster, and the higher-end models can include an automatic document feeder to streamline faxing and copying tasks.

Brother MFC-5200c

From: Brother Industries, Ltd., www.brother.ca
Estimated price: \$699

Cartridge prices: \$35 (black), \$19 (ea. C, M, Y)

On the opposite end of the size scale from the MFC-4420c, we have the MFC-5200c, which is a lot bigger and has a lot more functionality. It uses four separate ink tanks (cyan, magenta, yellow, and black, for more efficient ink usage) that have more ink in them and slot straight into the printhead. Installation of the cartridges was somewhat awkward,

though (the cover could not be raised enough to easily read the instructions inside), and provided one humorous moment during initial setup: the LCD window said "please open cover" but as soon as we did, a message said "cover open, please close cover."



Once that was complete, we had very few issues with the printer. Colour copying was pretty straightforward, and the 30-page sheet feeder was very easy to use. As with the 4420c, this model features scaling from 25 to 400 percent in 1 percent increments, giving you fairly fine control over your copy sizes. The MFC-5200c also comes with slots on the front for digital camera media, and it's fairly easy to do an index print (it's not a

Continued on page 52

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< NEW & NOTABLE >

WHAT'S NEW

Continued from page 10

No matter how good that LCD screen is on the back of your digital camera, there will always be frustrating situations where it's just too small. And if you need to preview a collection of photos quickly, downloading them to the computer and opening them one by one just adds to the frustration. So here's another option. BenQ (www.benq.com) has released a 15-inch LCD monitor with what the company calls Digital Photo Frame technology—it has memory card readers built into the monitor, and photos can be viewed on the monitor directly through the onscreen controls, without going through the PC.



The BenQ FP591 offers a standard resolution of 1,024x768, and a signal response time of 16 milliseconds, according to the company. It accepts CompactFlash, Secure Digital, MultiMedia Cards, and Smart Media cards, and will display pictures in either full screen or slideshow format. It features a dual input interface and brightness of 500 cd/m2 with a contrast ratio of 450:1, according to BenQ. It carries a suggested retail price of US\$449.

Here's welcome news for those who rely on talking books. Telex Communications (www.telex.com) has introduced the Scholar Digital Talking Book player, a portable CD player that plays DAISY (Digital Accessible Information System, more information at www.daisy.org) CDs, as well as regular audio CDs and MP3s.



The player, which carries a suggested retail price of US\$249, allows users to jump to specific page numbers and chapters in the Daisy structure, and offers a bookmarking function. It has a USB interface for future upgrades, and comes with both headphones and a line out jack for connection to external speakers.

For those who still prefer a keyboard to a stylus, and find that thumb keyboards make them feel like they're all thumbs, there's still hope for a handheld. NEC (www.nec.com) has added to its line of clamshell-style handheld PCs the MobilePro 900, with an Intel PXA255 processor and 64 MB RAM base SDRAM. It runs on Microsoft's Handheld PC platform and comes with several familiar applications, including Pocket Word, Excel, Pocket PowerPoint and Internet Explorer.



The device measures 24.6x12.8x3 cm (9.69x5.05x1.19 in.) and offers an 8.1-inch HVGA (640x240) touchscreen display. According to NEC, it weighs less than 900 g (2 lb.) with the standard battery, which the company says offers eight hours of normal operation.

The device includes USB host/slave ports, slots for CompactFlash and PC Cards, and an infrared (Fast IR) port.

The squeezed down size doesn't save much cash, however. The MobilePro's keyboard is about 92 percent of the size of a standard notebook computer keyboard, and with a starting price of US\$899, the keyboard isn't the only thing that comes close to imitating a notebook.

Continued on page 52

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< HANDS ON >

Computing on the go redux

New notebooks, better battery life

By Sean Carruthers

Last month's cover story was all about computing on the go, but we received a pair of new notebooks a bit too late to include them in that issue. We've put them through their paces in the lab and can tell you about them this issue.

Fujitsu LifeBook S2000

Fujitsu recently introduced new LifeBook models using processors from both of the major CPU manufacturers. The more recent of the two is the LifeBook S2000, which uses AMD's new XP-M 1700+ mobile processor, which offers a few major advantages over Intel-based notebooks.

The first is size: compared to the mobile Pentium 4, the Athlon XP-M requires less space, both size-wise and from a thermal perspective—this processor doesn't require the same mas-

sive heatsink and cooling fan, which allows for a much thinner and lighter machine overall. A second and more attractive reason is that the Athlon XP-M processors offer very good value, bringing the overall system price down. Starting at only \$1,999, the S2000 is a good example of this.

The LifeBook S2000 is indeed a compact little unit at 29.2x23.6x3.4 cm, and only 2.05 kg (4.5 lb.) with the optical drive. However, it still manages to fit a ton of features into the rugged magnesium alloy casing, including a 13.3-inch TFT screen, a hot-swappable DVD/CD-RW drive, two USB 2.0 ports, and a PC Card slot. Though not included in the base model, you can also get a version of the notebook with 802.11b wireless networking, and there's a switch on the rear of the machine to turn it off when you want to conserve battery power. If there's anything to complain about with the

Continued on page 42



Fujitsu LifeBook S2000

From: Fujitsu Canada, Inc., www.fujitsu.ca

Estimated price: \$1,999 and up

PCMark 2002

CPU:4,136
Memory:2,245
HDD:541

MobileMark 2002

Performance rating:97
Avg response time (sec.):2.03
Battery life rating (min.):130

SiSoftware Sandra Professional 2002

CPU Arithmetic Dhrystone (MIPS)3,899
CPU Arithmetic Whetstone (MFLOPS)2,023
CPU Multimedia Integer (it/s)8,073
CPU Multimedia Floating Pt (it/s)8,922
Mem Bdwth Int Buffered (MB/s)1,145
Mem Bdwth FP Buffered (MB/s)1,120



Toshiba Tecra M1

From: Toshiba Canada, www.toshiba.ca

Estimated price range: \$3,599 to 3,999

PCMark 2002

CPU:5,223
Memory:4,560
HDD:620

MobileMark 2002

Performance rating:152
Avg response time (sec.):1.3
Battery life rating (min.):325

SiSoftware Sandra Professional 2002

CPU Arithmetic Dhrystone (MIPS)5,472
CPU Arithmetic Whetstone (MFLOPS)2,065
CPU Multimedia Integer (it/s)3,084
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Computing on the go redux

Continued from page 40

configuration, it's that it has no FireWire port, and the onboard speakers aren't great—pretty typical for many notebooks, so neither of these is a major sticking point.

The LifeBook S2000 comes with Windows XP Professional installed and DVD player software in the box. It features a one-year warranty, but you can bump that up to three for a bit extra money.

The performance on this notebook definitely requires a few explanatory notes. It's a fairly good performer compared to many of the notebooks out there, especially those using older processors—it outperformed all of the Tablet PC models we looked at in the February issue (some by a very substantial margin), and it also sports better scores than many of the Pentium 4 notebooks we've looked at. True, it lags behind many of the new Centrino-based notebooks (including the Toshiba Tecra model we look at this month), but it's worth keeping in mind that many of those models tack another \$1,000 or more onto the price tag. In other words, from a price/performance perspective,

the S2000 holds its own quite admirably.

The battery life is another issue altogether. During our MobileMark 2002 benchmark, which runs a series of applications until the battery runs out of juice, the S2000 was only able to manage 130 minutes, or just over two hours. It's worth noting, however, that that was with all power-saving functionality turned off (which is standard practice for benchmarking). If you're not running your machine at full-tilt, you'll almost certainly achieve better results. In either case, you may want to invest the extra money in a second battery if you want extended runtime.

Toshiba Tecra M1

Toshiba was at the official launch of Intel's Centrino technology, proudly displaying its new mobile product, the Tecra M1. We've now had a chance to take a closer look.

There are a few key selling points to the Centrino platform: first, Centrino-branded devices use Intel's new Pentium M processor, which runs on a 400 MHz front-side bus, but at a lower overall clock speed; this allows for very good performance while keeping the machine's power and thermal require-

ments low. With the lower thermals (in other words, it doesn't generate as much heat), the machine can dispense with the massive cooling hardware typically required by the Pentium 4 processor, which helps keep the notebook size and weight down. This also greatly improves the battery life on Centrino notebooks. This is still true when the 802.11b component—standard with all Centrino configurations—is turned on. (Granted, runtime while using wireless networking will be a lot less, but even the wireless component in Centrino has some power-saving optimizations.)

The Tecra M1 is very similar in design to many other recent Toshiba notebooks, slightly curvy and quite stylish. At the time of writing, there are two versions of the M1 available. Both feature a 14-inch TFT display capable of 1,024x768 resolution, a removable DVD/CD-RW combo drive (exchangeable with either an optional floppy or a second battery), 512 MB of DDR memory, 10/100 Ethernet, 56 Kbps modem, one FireWire and three USB 2.0 ports, two PC Card slots, and one SecureDigital card slot. Both versions feature built-in 802.11b wireless networking, which can be turned off with

the flick of a switch on the front of the notebook when you want to conserve battery power.

One version ships with a 1.5 GHz Pentium M processor and a 40 GB hard drive, for \$3,599. The other comes with a 1.6 GHz processor and a 60 GB hard drive, for \$3,999. Both have Windows XP Professional installed. The casing for the notebook is slightly larger than the AMD-based Fujitsu model reviewed this month, but more compact than the typical Pentium 4-based notebook—the dimensions are 31.2x26.4x3.65 cm, and it checks in at 2.68 kg (5.9 lb.). Both models have a three-year warranty (only one year for the battery).

As with other Centrino models we've seen, this one is impressive both in terms of system performance and battery life. The performance is nearly the highest we've seen in a notebook computer—among the models we've seen in the lab, the Acer Travelmate TM800 edges it out, but only slightly. The battery life is the best we've seen so far with a single-battery configuration, at five hours and 25 minutes. Starting at \$3,499 though, it's not cheap, but investing the extra money sure beats running out of power halfway through a flight. □

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K7 Master

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64M GeForce II MX400 Video Card
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52X CDROM / 1.44M FDD
Integrated 10/100 Lan
Keyboard+Wheel Mouse+Speakers

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64M GeForce II MX400 Video Card
Integrated 3D Sound
40G 7200rpm Hard Drive
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< DIGITAL PHOTOGRAPHY >

Inexpensive utilities for digital photography

By Gene Wilburn

The further you progress with digital photography, the more you need specialty tools to help you achieve the best results from your digital images. Some of these exist as plug-ins to Photoshop and others are standalone utilities. To keep the cost of tools from getting out of hand, it's worthwhile evaluating the best shareware and freeware offerings. Here's a collection of four of my most often-used standalone utilities.

VueScan (Windows, Mac, Linux)



Whether you're scanning with a flatbed scanner, a dedicated film scanner, or both, the native product software often doesn't deliver the full capability of the scanner sensor. If you have a nagging feeling that your Minolta, Nikon, Epson, Canon, or other software isn't delivering all the goods, check out Ed Hamrick's VueScan site (www.hamrick.com). VueScan has a large following amongst those who take their scanning seriously.

Despite a somewhat primitive-looking interface, VueScan abounds with advanced controls and settings for adjusting image scans. It comes with a large number of film profiles to assist with colour balance and provides custom profiling of both ICC and IT8 colour calibration. Depending on the capabilities of your scanner, it can scan in 24-, 48-, and 64-bit modes. VueScan includes a cleaning feature similar to Digital ICE for scanners that have an IR (infrared) channel. I like VueScan for its ability to provide a single interface to

multiple scanners.

My favourite and most used feature of VueScan is batch scanning. When I'm scanning rolls of 35 mm film, I batch scan each strip of the roll, saving each VueScan raw file to disk, along with a small JPEG. When batch scanning is complete, I gather the JPEGs into a folder and use Photoshop 7's Contact Sheet feature to create a digital contact sheet. I then use VueScan to reread the saved raw scans to fully process selected images that I will save as TIFFs. I burn the raw VueScan scan files to CD-R in case I want more of the images later. It saves me rescanning.

VueScan is multi-platform shareware with a generous licence. At US\$49.95 for the Standard edition and US\$79.95 for the Professional edition, the licence allows you to use the software on up to four personal computers and provides unlimited free upgrades. There is a trial version you can download to compare with your existing scanner software.

IMatch (Windows only)



Once you start acquiring digital images from your camera and scanners, you soon have a disk full of images that are hard to find and organize. Early on in the process it's a good idea to organize images into directories that make sense, and to use some kind of meaningful naming convention. Even so, finding images after they number in the thousands, can be a challenge. IMatch (www.photools.com) to the rescue!

An easy-to-use image-management system, IMatch allows you to search, share, and publish your digital image collection by creating a database of thumbnail images with descriptors. It

Continued on page 46

Nextype Station

Entry Level System

- @256MB DDR PC2100
- @1.44 Floppy Drive
- @Maxtor 40GB ATA/133 HDD
- @52x CD-ROM ATAPI
- @Onboard Share RAM AGP Video
- @Onboard AC'97 Sound w/ Speaker
- @Onboard 10/100Base-T LAN
- @18" ATX Tower Case w/ 300W PS
- @107 Key Keyboard & Mouse

AMD Athlon XP 2400+/2400+
\$489/519

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\$551/593

Choose Your CPU Type

AMD Duron 1600+
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\$411/425/441

AOOpen SOHO F58800

Intel Pentium 4 F58800 System

- @AOpen AX4C Max i875P Main Board
- @512MB DDR333 (2 x 256MB Dual CH)
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- @Seagate 120GB SATA 7200rpm HDD
- @AOpen S2x24x52x CD-RW w/ Nero 5
- @AOpen nVIDIA FX 5200 128MB DDR 8X
- @Onboard 5.1 Sound w/ MS805 Speaker
- @Onboard Gigabit LAN, IEEE1394, USB 2.0
- @AOpen QF45 ATX Tower Case w/ 300W
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Intel Pentium 4 2.4/3.06 (533MHz)
\$1210/1499

Choose Your CPU Type

Intel Pentium 4 2.4C
\$1269

Intel Pentium 4 2.6C/2.8C
\$1315/1400

AOOpen Pro GAMER

AMD Athlon XP System

- @AOpen AK79D-1394 Main Board
- @Swiftech MCX462 Heatsink & Fan
- @512MB DDR333 (2 x 256MB)
- @3.5" 1.44 Floppy Drive
- @Maxtor 80GB ATA/133 7200rpm HDD
- @LG 48xCD-RW & 16x DVD Combo w/ Nero 5
- @AOpen nVIDIA FX 5800 128MB DDR 8X
- @Onboard 5.1 Sound w/ MS805 Speaker
- @Onboard 10/100 LAN, IEEE 1394, USB2.0
- @AOpen QF45 ATX Tower Case w/ 300W
- @107 Key Keyboard & Wheel Mouse

AMD Athlon XP 2400+/2500+
\$1431/1449

Choose Your CPU Type

AMD Athlon XP 3000+
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- Arctic Alumina Premium Thermal Compound
- Arctic Alumina Thermal Adhesive Compound

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- Alpha PAL80451 Heatsink & Delta Fan Retail
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- Cooler Master IAC-002 Aluminum Socket 478
- Cooler Master HHC-001 Copper Heat Pipe AMD
- Cooler Master HHC-001 Copper Heat Pipe P4
- Cooler Master HHC-001 Copper Heat Pipe SilentAMD
- Cooler Master HHC-001 Copper Heat Pipe SilentP4
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- Swiftech MCX462 Heatsink & Delta 8000rpm Fan
- Swiftech MCX4200 Copper Heatsink Only
- Swiftech MCX4200 Heatsink Only for Socket A
- Swiftech MCX462+ Heatsink Only for Socket A
- Swiftech MCX462+ Thermoelectric Heatsink Only
- Swiftech MCX462+ Thermoelectric Heatsink Only
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- Thermaltake Volcano 9 Heatsink & Smart Fan
- Thermaltake Volcano 9 w/ Cool Mod
- Thermal Right AX7 SLK9000
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- Zalman CNP6000A-A/Cu for P4
- Zalman CNP6000B-A/Cu/CNP6000Cu for P4
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- AOPEN MK77M-V VIA AGP w/ SOUND/LAN/VGA
- AOPEN MK79G-N nForce2 - G w/ VGA/SOUND/LAN
- Asus A788X-X VIA KT400 8X AGP DDR400 LAN
- Asus A788X Deluxe nForce2 8X AGP DDR400
- Chaintech 7NF2 nForce2 - w/ Sound/VGA/LAN
- ECs 7VMM w/1600+ CPU/VGA/SOUND/LAN
- Gigabyte 7VAXP DDR400 w/ 6CH/LAN/USB2/RAID
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- AOPEN AX4SG-N i865G 800MHz w/ S. ATA, VGA, LAN
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- AOPEN MX4GVR 845GL w/ VGA/Sound/LAN
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- AOPEN AX4PER 845PE DDR333/USB2.0/SOUND
- AOPEN AX4R-PLUS Intel E7205 Granite Bay
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- Asus P4GE-V i845GE w/ VGA/LAN/Sound
- Asus P4PE i845PE w/ RAID Serial ATA/G LAN/1394
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- Onboard USB2.0, IEEE 1394 & LAN
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- 81 PCI Slot

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\$409

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- SB41G2 (Black ED) \$419
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- Tri Color

\$35

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- Blue
- Green
- Red
- 7 Color

\$31

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ECS Elite Group G732

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- @15.0" SXGA+
- @ATI Mobility Radeon 9000
- @64MB DDR
- @CD-RW/DVD Combo Drive
- @56K FaxModem
- @10/100 LAN
- @12 Cell 1960mAh Li-Ion Battery Pack

\$1799

Vanec SPECTRUM UV Fan

\$20

BLUE UV
GREEN UV
ORANGE UV
BLUE GREEN UV
GREEN ORANGE UV

Cooler Master Aero 7+ for Socket A

\$65

Fan Dimension: 80 x 80 x 70 mm
Rated Speed: 1900-3500 rpm
Air Flow: 10.9-20.0 CFM
Rated Voltage: 7-13.5V
Heat Sink Dimension: 80 x 80 x 51 mm
Heat Sink Type: Copper Skived Fin
Air Pressure: 2.3-10.7mm H2O

AOpen #1 Computing Solution Provider

AX45G Max

Key Feature:

- Intel Pentium 4 CPU, 800MHz
- Chipset: Intel 865G, ICHSR
- Main Memory: DDR DIMM x 4
- Graphics: 8X AGP slot
- Form Factor: ATX
- Onboard Video
- Onboard 5.1
- Onboard Gigabit LAN
- Onboard USB2.0
- Onboard IEEE1394

\$245

Thermaltake SubZero4G

Microprocessor-controlled thermo-electric cooling
(Applicable with Intel Intel P4 478, AMD Athlon XP)

Significantly reduces fan noise

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HARD DISK DRIVE

7200rpm Hard Disk Drive

- Seagate 5. ATA 80/20GB \$218/258
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- Maxtor Diamond Plus 9 ATA/133 80/80GB \$139
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- Western Digital 160/200GB 8MB Cache \$299/435

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We have Silver, Copper, Blue, Yellow, Red, Black, EL Light...

Thermaltake Xaser III w/ Side Window

V1000A Black Steel \$219
V1000D Blue Steel \$219
V2000A Silver AL \$279

Ultra-Quiet Power Supply

Seasonic SS-300FS 300W P.S. \$75
Seasonic SS-400FS 400W P.S. \$129
Zalman ZM300-AF 300W P.S. \$98
Zalman ZM400-AF 400W P.S. \$159
Nexus NX3000 300W P.S. \$105

CPU & MEMORY

AMD Socket A 462 (Duron/Athlon XP/MP)

- AMD Duron XP 2000+ Retail \$104
- AMD Athlon XP 2100+/2200+ Retail \$116/116
- AMD Athlon XP 2400+/2600+ (333MHz) Retail \$116/129
- AMD Athlon XP 2700+ (333MHz) Retail \$199
- AMD Athlon XP 2500+/2800+ Retail (Barton) \$1145/258
- AMD Athlon XP 3000+/3200+ Retail (Barton) \$378/640
- AMD Athlon MP 2000+/2200+ Retail \$185/205
- AMD Athlon MP 2400+/2600+ Retail \$234/300

Celeron Socket 478 mPGA L2 128K

- Intel Celeron 1.7/1.8/2.0/2.2GHz \$91/114/128/164
- Intel Pentium 4 2.4C/2.6C \$283/336
- Intel Pentium 4 2.8C/3.0C \$422/604

Pentium 4 Socket 478 mPGA 533MHz

- Intel Pentium 4 1.8A/2.4A - 400MHz FSB \$202/235
- Intel Pentium 4 2.4GHz - 533MHz FSB \$231
- Intel Pentium 4 2.53/2.66GHz - 533MHz FSB \$255/273
- Intel Pentium 4 2.8/3.06GHz - 533MHz FSB \$360/515

SEAMATE Memory

- 256/512MB SDRAM PC133 \$61/105
- 256/512MB DDR266 PC2100 \$39/78
- 256/512MB DDR333 PC2700 \$49/79
- 256/512MB DDR400 PC3200 \$64/118

COMPUTER HOUSING

- AOPEN QF45A 18" ATX Tower Case w/ 300W (Black) \$89
- AOPEN QF45C 18" ATX Tower Case w/ 300W \$89
- AOPEN H500A 17" ATX Tower Case w/ 300W P.S. \$95
- AOPEN H600A 18" ATX Tower Case w/ 300W P.S. \$115
- AOPEN H800A Server Tower w/ 337W Redundant \$480
- AOPEN H3400 Slim M. ATX Case w/ 180W P.S. for P4 \$89
- AOPEN H3400 Slim M. ATX Case w/ 180W P.S. for P4 \$99
- Antec P15660B 1080mm Tower w/ 330W \$175
- Antec PLUS860/880 1080mm Mid Tower w/ P.S. \$235/255
- Antec PLUS1060/1080 1080mm Server T. \$245/279/289
- Antec SLK-1600/SLK-2600/SLK-3700AMG. \$89/199/150
- Chyang Fun 21" Dual Width Server Chassis \$280
- Chyang Fun CF 2029 17" ATX Case w/ Acrylic Front \$75

Aluminum Case

- Antec LANBOY Tower Case w/ P.S. \$145
- Skyhawk Jupiter/Galaxy Aluminum w/ Q Win \$117/110
- Cooler Master ATC-201 Aluminum Tower Case \$360
- Cooler Master ATC-210 (Green Access Door) \$399
- Cooler Master ATC-220 Aluminum Tower \$450
- Cooler Master ATC-101-SX2 Light Gray Tower Case \$450
- Cooler Master ATC-101-SX4 Anodizing Tower Case \$450
- Cooler Master ATC-600-VX2 (Fog Verdant) Desktop \$399
- Cooler Master ATC-600-DX1 (Dark Gray) Desktop \$399
- Cooler Master ATC-610GX Desktop \$450
- Cooler Master ATC-620C-GX2 / SX2 Desktop \$199
- Cooler Master ATC-710 Tower Case \$245
- Cooler Master ATC-500 Tower Case \$264
- Cooler Master ATC-410 Aluminum Case \$179
- Liou PC 30 Aluminum Tower Case \$288
- Liou PC 35 USB Aluminum Tower Case w/ 2 Rack \$199
- Liou PC 42 USB Aluminum Tower Case \$199
- Liou PC 52 Aluminum Tower Case \$199
- Liou PC 60 Aluminum Tower Case \$159
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- Liou PC 65B USB Aluminum Tower Case (Window) \$195
- Liou PC 6085Au Aluminum Tower w/ Blue Light \$255
- Liou PC 6087Au Aluminum Tower w/ Open Side \$255
- Liou PC 6089Au Aluminum Tower w/ Open Side \$264
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- Liou PC 70 USB Aluminum Server Case \$315
- Liou PC 71 USB Aluminum Server Case (Black) \$315
- Liou PC 75 USB Aluminum Server Case (Window) \$335
- Liou PC 75B USB Aluminum Server (Window) \$345
- Liou PC 76 Aluminum Server Case \$499
- Liou PC9300 Aluminum Desktop Case \$189
- Liou PC9400 Aluminum Desktop Case \$210
- Liou Side Panel Window for PC60/67/68/69 \$59
- Liou Side Panel Windows Black for PC61/12 \$65

VIDEO CARD

- AOPEN GF4 MX440 64MB DDR w/ TV Out \$85
- AOPEN Aeonus FX5200 128MB w/ TV Out \$125
- AOPEN Aeonus FX5800 128MB w/ TV Out \$539
- Asus V7100 Pro GF2 MX400 64MB \$59
- Asus V9180D GF4 MX 440 64MB 8x AGP VO \$141
- Asus V9180D Magic GF4 MX 440 64MB 8x AGP \$110
- ATI All in Wonder RADEON 9700 Pro 128MB oem \$525
- ATI All in Wonder RADEON 9500D 64MB Retail \$299
- ATI All in Wonder RADEON 9500 128MB Retail \$425
- ATI All in Wonder RADEON 9000 64MB DDR Retail \$275
- ATI RADEON 9800 Pro 128MB DDR OEM \$559
- ATI RADEON 9700 Pro 128MB DDR OEM \$463
- ATI RADEON 9600 Pro 128MB DDR Retail BOX \$268
- ATI RADEON 9000 Pro 128MB DDR OEM DVI VO \$159
- ATI RADEON 9100 128MB DDR OEM \$149
- ATI RADEON 9000 Pro 64MB DDR Retail BOX \$126

MONITOR

17" Monitor

- Impression 17" 27mm Monitor \$169
- Samsung 753DF 17" Flat 20mm \$199

19" Monitor

- Samsung 955DF 19" Dynafast 0.20mm (H) \$349
- Samsung 900NF 19" Nature Flat 25mm A.G. \$499

24" Monitor

- MAG Innovation LT565 15" LCD \$350
- MAG Innovation LT765 17" LCD \$530
- MAG Innovation HD772 17" LCD Slim w/ Speaker \$370
- MAG Innovation HD772 17" LCD Slim w/ Speaker \$550
- Samsung SYNCMASTER 152T 15" LCD Silver/Black \$485
- Samsung SYNCMASTER 172T 17" LCD Silver/Black \$855
- Samsung SYNCMASTER 191T 19" LCD Silver/Black \$990

SOFTWARE - System Only

- Microsoft Windows 2000 Professional OEM \$249
- Microsoft Windows 2000 Server w/5 Clients OEM \$1350
- Microsoft Windows XP Home Edition OEM \$155
- Microsoft Windows XP Professional OEM \$265
- Microsoft Office XP Professional OEM \$499
- Microsoft Office XP Small Business ED OEM \$299
- Norton Anti Virus 2003 OEM \$35
- Norton System Works 2003 Pro OEM \$45

Liou PC-6020 Silent Case

Dimension: 210x460x525 mm (W.H.D.)
Drive bays 4x5.25" 3x3.5" 5x3.5" internal
Cooling fans: 3 x Ball Bearing fans installed
M/B type: ATX & Pentium 4 (MAX SIZE: 12"x9")
Front USB: 2 ports (support USB 2.0)

\$255

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Inexpensive utilities*Continued from page 44*

can read EXIF and IPTC metadata directly from the images and it offers one of the most versatile categorizing systems of any product on the market. It also offers batch conversion, label support, watermarking, and support for removable media, such as CDs and DVDs.

Priced at US\$49.95, IMatch offers viewing capabilities for all standard file formats and for most digital camera raw formats, including Canon, Nikon, Minolta, Fujifilm, Olympus and Kodak. For the adventurous, it provides a full scripting capability.

Neat Image (Windows only)

While I love the quality of the images I get from my Canon G2 digital camera at ISO 50, when I raise the ISO to 200 or 400 for dimly lit scenes, the sensor generates considerable noise (the digital rough equivalent of grain in film, but not as attractive). When I need to shoot in dim light without flash and still get good looking results, I turn to Neat Image (www.neatimage.com), a denoiser/sharpening utility.

Neat Image provides a number of useful adjustments for calculating noise and algorithmically smoothing it out without losing too much image detail. While no product can work magic, this one comes close. It also does a fine job of reducing grain on scans from traditional high-speed films such as Tri-X. The versatility and quality come at the price of speed: Neat Image is very slow when used on large files. But it can be used in batch mode and be left chugging in the background overnight.

The Home edition of Neat Image costs US\$29.90 and the Professional edition costs US\$59.50. The Home edition only works on 8-bit images, while the

Professional edition works with 16-bit images. The Pro version also allows an unlimited number of files in a batch process. The Home version is limited to 10.

IrfanView (Windows only)

Last but not least in this roundup is one of my favourite programs: IrfanView

(www.irfanview.com). Day in, day out, this is the utility I use the most, and it's free.

IrfanView is an image viewer. But to call it that is to call Tim Hortons just a doughnut shop. It is, but don't forget the bagels and the chili deal! Lean and snappy, IrfanView excels at displaying images and, with free plug-ins, can also display all EXIF and IPTC metadata. Furthermore, it does batch conversions, colour adjustments, resizing, sharpening, thumbnails, lossless JPEG rotations, zooming, and even screen captures and wallpapers. It even performs simple automated slide shows.

I always use IrfanView to batch convert large images to thumbnails. And I appreciate its ability to send an image to the external image editor of my choice—with a single click I can launch what I'm viewing into Photoshop or Picture Window Pro. I strongly recommend this versatile, free product as the the first digital image utility you install for Windows. □

Gene Wilburn is a Toronto-based writer and photographer. He can be reached at gene@wilburn.ca.

AMD Econ System		AMD Value System		AMD Power System		AMD Super System		AMD Super+ System	
AMD Duron 1800+ Pro CPU ECS K7SOM+ 4XUSB2.0 Mainboard 128MB PC2100 DDR266 (Spectek) Maxtor 30GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive Integrated 3D Graphic Video Integrated AC97 3D Sound Integrated 10/100 Network Card LG 52X CD-ROM 18" 300W Tower Case PS/2 Windows Keyboard PS/2 3D Wheel Mouse 240W Speakers \$299		AMD XP 2000+ CPU Gigabyte GA-7VKMP 6XUSB2.0 256MB PC2700 DDR333 (Infineon) Maxtor 40GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive Integrated 3D Graphic 4X AGP Integrated AC97 3D Sound Integrated 10/100 Network Card LG 52X24X52 CDRW 18" 300W & 2XUSB Front Tower Case PS/2 Windows Keyboard PS/2 3D Wheel Mouse 240W Speakers \$439		AMD XP 2200+ CPU ASUS A7V8X-X KT400 6XUSB2.0 256MB PC2700 DDR333 (Infineon) Maxtor 80GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive Geforce4 MX440 64MB DDR TV out Integrated AC97 6-Channel 3D Sound Integrated 10/100 Network Card LiteOn 16X DVD w/Power DVD Software 18" 300W & 2XUSB Front Tower Case Win Multimedia Internet Keyboard 680W 3D Speakers System w/ Sub PS/2 3D Wheel Mouse \$569		AMD XP 2500+ Barton CPU MSI K7N2 Delta-L nForce2 6XUSB2.0 512MB PC2700 DDR333 (Infineon) Maxtor 80GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive ASUS V9520 FX5200 128MB DDR TV out Integrated C-Media 6-Channel 3D Sound Integrated 10/100 Network Card LG 52X24X52 CD-RW 18" 400W & 2XUSB Front Tower Case Microsoft Multimedia Keyboard Microsoft Optical Wheel Mouse 800W Wooden Speakers system w/ Subwoofer \$779		AMD XP 2800+ Barton CPU ASUS A7N8X-Deluxe nForce2 6XUSB2.0 1GB PC2700 DDR333 (Infineon) Maxtor 120GB ATA133 7200rpm 8MB HD Sony 1.44MB Floppy Drive MSI 8900 GF4 T4800SE 128MB DDR TV-Out, DVI 6-Channel Realtek ALC650 audio Sound (O/B) Dual 10/100 Network Card, IEEE1394, Serial ATA LiteOn 16X DVD w/ Power DVD Software LG 52X24X52 CD-RW 18" Dual Fan 400W & 2XUSB Front Tower Case Microsoft Cordless Multimedia Keyboard Microsoft Cordless Optical Wheel Mouse 800W Wooden Speakers system w/ Subwoofer \$1279	
AMD Duron System AMD Duron 1.3GHz CPU ECS L7VMM2+ VIA M266 6XUSB2.0 256MB PC2700 DDR333 Maxtor 30GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive Integrated 3D Graphic Video Integrated AC97 3D Sound Integrated 10/100 Network Card LG 52X CD-ROM 18" 300W Tower Case PS/2 Windows Keyboard PS/2 3D Wheel Mouse 240W Speakers \$339		P4 Value System Intel Celeron 2.0GHz CPU ASUS P4S533-MX 6XUSB2.0 256MB PC2700 DDR333 (Infineon) Maxtor 40GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive Integrated 3D Graphic 4X AGP Integrated C-Media 6-Channel Sound Integrated 10/100 Network Card LG 52X24X52 CDRW 18" P4 300W & 2XUSB Front Tower Case PS/2 Windows Keyboard PS/2 3D Wheel Mouse 240W Speakers \$449		P4 Power System Intel P4 1.8GHz CPU ASUS P4S8X-X SiS655 6XUSB2.0 256MB PC2700 DDR333 (Infineon) Maxtor 80GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive Geforce4 MX440 64MB DDR TV out Integrated AC97 6-Channel 3D Sound Integrated 10/100 Network Card LiteOn 16X DVD w/ Power DVD Software 18" P4 300W & 2XUSB Front Tower Case Win Multimedia Internet Keyboard 680W 3D Speakers System w/ Sub PS/2 3D Wheel Mouse \$649		P4 Super System Intel P4 2.4BGHz CPU MSI Neo2-LS i865PE 6XUSB2.0 FSB800 512MB PC2700 DDR333 (Infineon) Maxtor 80GB ATA133 7200rpm HD Sony 1.44MB Floppy Drive ASUS V9520 FX5200 128MB DDR TV out Integrated C-Media 6-Channel Sound Integrated 10/100 Network Card, Serial ATA LG 52X24X52 CD-RW 18" P4 400W & 2USB Front Tower Case Microsoft Multimedia Keyboard Microsoft Optical Wheel Mouse 800W Wooden Speakers system w/ Subwoofer \$889		P4 Super+ System Intel 2.66GHz CPU ASUS P4C800-Deluxe 8XUSB2.0 FSB800 1GB PC2700 DDR333 (Infineon) Maxtor 120GB ATA133 7200rpm 8MB HD Sony 1.44MB Floppy Drive MSI 8900 GF4 T4800SE 128MB DDR TV-Out, DVI Integrated AI audio (6-channel digital audio) Gigabit LAN, IEEE1394, 4XSerial ATA LiteOn 16X DVD w/ Power DVD Software LG 52X24X52 CD-RW 18" P4 Dual Fan 400W & 2XUSB Front T.Case Microsoft Cordless Multimedia Keyboard Microsoft Cordless Optical Wheel Mouse 800W Wooden Speakers system w/ Subwoofer \$1379	
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All advertised prices reflect 3% cash discount.

All Systems come with 1 year parts and 3 years labour hardware warranty.

Formatting PowerPoint slides



ing using the slide master, to ensure all your slides have a common look.

Understanding masters

PowerPoint has a number of masters, each of which helps create a look for part of your presentation. Think of masters as the equivalent to the styles feature in Word or Publisher.

PowerPoint has a number of masters that appear as basic slides with a layout that includes placeholders for common slide formats: a layout with a title, a text placeholder, and some sample text, for example. You select various elements in the slide master and format them the way you want. If, for example, you want all of the slide titles to be in Verdana, yellow, 24-point, bold type, you would format the title this way in the slide master. Then, the titles on all new slides will automatically have that format. There is also a title master, for preparing slides that, for example, can be used to introduce new sections in a multi-topic presentation.

PowerPoint 2002 includes a notes master template, for items you need to refer to during your presentation, and a handout master for items you want your audience to take with them.

By creating multiple master slides, you can have two or more different looks in your presentation. For example: a blue background for one topic and a red background for another. Multiple masters offer this level of control.

To see the masters for any given presentation, choose View, then Master, and you'll see menu options for Slide Master, Notes Master, Handout Master, and Title Master (the latter may not be included in all presentations, but you can easily create one). To see the slide master, click its menu option. The screen will clear (your slides will be hidden) and a single slide with a heading and text placeholder will be displayed.

You can now format elements on the

slide master in the way you want text on your slides to appear. Click the title and format, then click the styles in the text placeholder to format each level of text. To do this, select a line of text, then right-click, and choose Bullets and Numbering, for example, to alter the bullet format for that level. To add a title master to a presentation that doesn't have one, right-click on the thumbnail for the slide master and choose New Title Master. You can format it using the same tools as you used for the slide master.



This image shows two sets of slide/title masters with the same template but different colours.

If you'd prefer to use a preset design for your slideshow, choose View and select Task Pane to display the task pane on the right of the screen. From the task pane dropdown list, choose Slide Design, Design Templates, and pick a template to use for your presentation. Some of these templates include a title master, which will appear as a second thumbnail image. When you've selected a design template, click the Color Schemes option in the task pane to alter the colours of the master, if desired.

Once you've chosen from the preset options, you can fine tune the result by altering the formatting of individual elements on the slide master and title master. Switch between the two by clicking the thumbnail image for either from those displayed on the left of the screen.

You can add a second master slide by right-clicking one of the thumbnail images on the left of the screen and choosing New Slide Master from the options displayed. This allows you to make a second master. However, it's difficult to apply the same design template to a second slide master without duplicating the first set (instead of simply adding a second set). To duplicate a slide master (or a slide master/title master pair),

choose Insert, then Duplicate Slide Master. Now you can change elements, like the background colour, on the second set, allowing you to use a single design but different colours.

When you've set up the slide and title masters, right-click one of them and choose Preserve Master—this prevents you from losing your slide masters if you remove the slides based on it. Then choose Close Master View from the Slide Master toolbar to return to the document and continue with your presentation.

Applying a master

With multiple slide masters, you can choose between them for creating any given slide. By default, the first slide master you create is applied to all slides, but you can change this, applying a master to some or all slides. To apply a master to all slides, from the task pane dropdown list, choose Slide Design, Design Templates, and your slide masters will appear in the top of the task pane. Click one of these masters and it will be applied to all the slides in your presentation.

To apply it to selected slides, hold Control as you click on all of the slides you want to apply it to, then click on a slide master template. Provided more than one slide is selected, the template will be applied to only those specified. If you need to apply a template to only one slide, click it and, from the dropdown list to the immediate right of the slide master template in the task pane, choose Apply to Selected Slides.

When you want title slides to look different than other slides, use a title master to format them. Apply the title master to a slide by clicking on the slide, choosing Format, then Slide Layout. From the slide layout options in the task pane, click the Title Slide Layout (it has two grey lines across it in thumbnail view). The layout has a single line for the slide show heading (or the heading for this section of the show), with space for another line or two of explanation. If you're adding a new title slide, click Insert, New Slide, then click the Title Slide layout.

Adding elements to a master

A slide master can incorporate a number of features, including your company logo or images in each slide that illustrate the topics covered in your presentation. To do this, open the slide master for editing

(View, Masters, Slide Master), then select Insert, Picture, and locate your logo in your clipart collection or from your disk.

Click on the image you want, then insert it into the slide. Move it into position on the slide master and resize it, if necessary. If you're using a coloured background for your slide and the image has its own background, you can remove it by changing its background setting to transparent. To do this, from the Picture toolbar (View, Toolbars, Picture), click the Set Transparent Color tool and click on the background of the image. Provided a single colour has been used for the image background colour, it will now be hidden from view and you will see the image merge better with the slide's background.

Before you finish in the slide master, ensure that the text you placed on your slide won't block out the image. To do this you may need to adjust the size of the text placeholder to ensure its border doesn't overlap the image border.

You may choose to use a larger version of the image, another image, or the same image in a different position on the title slide. To do this, select the title master (or create one), then repeat the process of adding an image to a slide.

PowerPoint has some additional features for fine tuning the text format and look of your slide masters. One of these is the line spacing options, which let you adjust the spacing between items in a bulleted list. To do this, select the bulleted item on a slide, choose Format, then Line Spacing. From this dialogue, set the spacing you want to use between lines of text in a single bulleted item, or set a spacing value to add space before or after each complete bulleted item. For example, to have single spacing between multiple lines of text in a single bulleted point, but 1.5 lines of spacing between successive paragraphs formatted with this type of bulleted item, set the After value to 0.5 lines.

In place of regular text bullets, you can use graphical bullets. These are small pictures that act as bullets to mark the different text points you make on your slides. To change the bullet style, on the master slide, select the text for that bulleted point and choose Format, Bullets and Numbering, click the Bulleted tab, and select the Picture button. When the Picture Bullet dialogue opens, choose an image for your bullet. If you have an

Continued on page 50



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Nordel 1U Entry P4

P4 Motherboard
Onboard Video/Audio/LAN
256MB DDR RAM
Black 1.44MB Floppy Drive
Black 52x CD-ROM Drive
80GB 7200rpm IDE Hard Drive
1U Rackmount Case w/250W

1.7GHz **\$1025**

1.8GHz **\$1055**

2.4GHz **\$1125**

Code 1U1

Nordel 2U Entry P4

P4 Intel Motherboard
Onboard Video/Gigabit LAN
256MB DDR RAM
Black 1.44MB Floppy Drive
Black 52x CD-ROM Drive
80GB 7200rpm IDE Hard Drive
2U Rackmount Case w/300W

1.7GHz **\$1180**

1.8GHz **\$1210**

2.4GHz **\$1280**

Code 2U1

Nordel Tower Entry P4

Intel 845WD1 Server Board
Onboard Video / IDE RAID
2 X Intel Pro 100 Ethernet
512MB ECC DDR RAM
1.44MB Floppy Drive
2 X 80GB 7200rpm IDE Hard Drive
52x CD-ROM Drive
17" Tower case w/460W

1.8GHz **\$1500**

2.4GHz **\$1570**

Code T1

Nordel 4U Entry P4

Intel 845WD1 Server Motherboard
Onboard Video / IDE RAID
2 X Intel Pro 100 Ethernet
512MB ECC DDR RAM
Black 1.44MB Floppy Drive
Black 52x CD-ROM Drive
2X 80GB 7200rpm IDE HDD
4U Rackmount Case w/460W

1.8GHz **\$1630**

2.4GHz **\$1700**

Code 4U1

Nordel 1U ATA Xeon

Intel se7501wv2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Combo drive
Onboard ATI Video
Onboard Dual GB Ethernet
Onboard IDE RAID controller
2 X 80GB 7200rpm IDE HDD
Intel 1U rackmount server chassis
350 Watt power supply

2x Xeon

2.0GHz **\$4190**

2.4GHz **\$4320**

2.66GHz **\$4750**

2.8GHz **\$5235**

3.06GHz **\$6320**

Code 1U2

Nordel 2U SCSI RAID Xeon

Intel se7501wv2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Combo Drive
Hot Swap
Onboard Dual GB Ethernet
Adaptec 2010s SCSI RAID
2 X 36GB 10k SCSI Drives
Intel 2U rackmount server chassis
480 Watt power supply

2x Xeon

2.0GHz **\$5370**

2.4GHz **\$5500**

2.66GHz **\$5935**

2.8GHz **\$6410**

3.06GHz **\$7490**

Code 2U2

Nordel Tower ATA Xeon

Intel se7505vb2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Drive
Onboard ATI Video
Onboard Dual Lan 1x GB
2 X SATA 80GB 7200rpm RAID
Intel SC 5250 server chassis
450 Watt power supply

2x Xeon

2.0GHz **\$3375**

2.4GHz **\$3515**

2.66GHz **\$3950**

2.8GHz **\$4445**

3.06GHz **\$5550**

Code T2

Nordel 4U SCSI Xeon

Intel se7501wv2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
Black 1.44 & CD-ROM Drive
Onboard ATI Video
Onboard Dual GB Ethernet
Onboard dual channel SCSI
2 X 18GB 10k SCSI drives
4U rackmount server chassis
460 Watt power supply

2x Xeon

2.0GHz **\$3930**

2.4GHz **\$4045**

2.66GHz **\$4485**

2.8GHz **\$4985**

3.06GHz **\$6085**

Code 4U3

Nordel 1U SCSI Xeon

Intel se7501wv2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Combo drive
Onboard ATI Video
Onboard Dual GB Ethernet
Onboard dual channel SCSI
2 X 18GB 10k SCSI drives
Intel 1U rackmount server chassis
350 Watt power supply

2x Xeon

2.0GHz **\$4755**

2.4GHz **\$4885**

2.66GHz **\$5320**

2.8GHz **\$5795**

3.06GHz **\$6875**

Code 1U3

Nordel 2U SCSI Xeon

Intel se7501wv2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Combo drive
Onboard ATI Video
Onboard Dual GB Ethernet
Onboard dual channel SCSI
2 X 18GB 10k SCSI drives
Intel 2U rackmount server chassis
2 X 500 Watt Redundant Power

2x Xeon

2.0GHz **\$5520**

2.4GHz **\$5640**

2.66GHz **\$6065**

2.8GHz **\$6555**

3.06GHz **\$7630**

Code 2U3

Nordel Tower SCSI Xeon

Intel se7501br2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Drive
Onboard ATI Video
Onboard Dual Lan 1x GB
Onboard dual channel SCSI
2 X 18GB 10k SCSI drives
Server Chassis
460 Watt power supply

2x Xeon

2.0GHz **\$3690**

2.4GHz **\$3815**

2.66GHz **\$4255**

2.8GHz **\$4755**

3.06GHz **\$5855**

Code T3

Nordel 4U Dual Xeon

Intel se7505vb2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
Black 1.44 & CD-ROM Drive
Onboard ATI Video
Onboard Dual LAN 1 X GB
Onboard SATA RAID
2XSATA 80GB 7200rpm RAID
4U rackmount server chassis
460 Watt power supply

2x Xeon

2.0GHz **\$3325**

2.4GHz **\$3465**

2.66GHz **\$3900**

2.8GHz **\$4395**

3.06GHz **\$5500**

Code 4U4

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3com 3c905tx Ethernet card \$65

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Windows 2000 server/ 5 user \$1085
Additional 5 user license pack \$295

SCSI hard drive Upgrades

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18GB 10k to 18GB 15k \$250
18GB 10k to 36GB 15k \$680
18GB 10k to 73GB 15k \$1910

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256MB to 512MB \$65
256MB to 1GB \$140
256MB to 2GB \$895

Memory Upgrades

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ECC DDR Upgrades

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512MB to 2GB \$895

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Intel se7501hg2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
1.44 & CD-ROM Drive
Hot Swap
Onboard Dual GB Ethernet
Adaptec 2010s SCSI RAID
2 X 36GB 10k SCSI Drives
Intel 5200 Server Chassis
650 Watt power supply

2x Xeon

2.0GHz **\$5720**

2.4GHz **\$5850**

2.66GHz **\$6285**

2.8GHz **\$6760**

3.06GHz **\$7840**

Code T4

Nordel 4U Dual Xeon

Intel se7505br2 Server Board
2 X Intel Xeon processors
1GB registered ECC DDR
Black 1.44 & CD-ROM Drive
Onboard ATI Video
Onboard Dual LAN 1 X GB
Onboard dual channel SCSI
2 X 18GB 10K SCSI HDD
4U rackmount server chassis
460 Watt power supply

2x Xeon

2.0GHz **\$3690**

2.4GHz **\$3815**

2.66GHz **\$4255**

2.8GHz **\$4755**

3.06GHz **\$5855**

Code 4U5



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Intel Celeron 2.4 \$389 AMD Duron Pro 1400+ \$269

Intel Celeron 2.4 GHz CPU	AMD Duron Pro 1400+ CPU
PCChips M925 P4 Motherboard	PCChips M825 AMD Motherboard
256MB PC2100 DDR RAM	128MB PC2100 DDR RAM
1.44MB Floppy Drive	1.44MB Floppy Drive
30GB (7200rpm) Hard Drive	30GB (7200rpm) Hard Drive
52X EIDE CD-ROM	52X EIDE CD-ROM
AGP SVGA O/B	AGP SVGA O/B
PCI 3D Stereo Sound O/B	PCI 3D Stereo Sound O/B
10/100 Base NIC	10/100 Base NIC
PS/2 Keyboard & Wheel Mouse	PS/2 Keyboard & Wheel Mouse
17" ATX Tower Case w/Power Supply	17" ATX Tower Case w/Power Supply
Power Amplified Speakers	Power Amplified Speakers

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in Town

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Intel PIV-2.4 GHz CPU	AMD XP-2000+ CPU
Asus P4S533X Motherboard	ECS K7VZA Motherboard
256MB PC2700 DDR RAM	256MB PC133 SDRAM
1.44MB Floppy Drive	1.44MB Floppy Drive
40GB (7200rpm) EIDE Hard Drive	30GB (7200rpm) EIDE Hard Drive
52x24x52x EIDE CD-RW	52X EIDE CD-ROM
GeForce4 MX440 64MB Video Card	GF2 MX400 32MB AGP Video Card
PCI 3D Stereo Sound O/B	PCI 3D Stereo Sound O/B
10/100 Base NIC	10/100 Base NIC
PS/2 Keyboard	PS/2 Keyboard
PS/2 Wheel Mouse	PS/2 Wheel Mouse
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Power Amplified Speakers	Power Amplified Speakers

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P4 System

Super
Sale

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Intel PIV-2.66 GHz CPU	AMD XP-2400+ CPU
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512MB PC2700 DDR RAM	256MB PC2700 DDR RAM
1.44MB Floppy Drive	1.44MB Floppy Drive
80GB (7200rpm) EIDE Hard Drive	40GB (7200rpm) EIDE Hard Drive
52x24x52 EIDE CD-RW	52x24x52 EIDE CD-RW
Asus GeForce FX 5200 128MB V/C	GeForce4 MX440 64MB Video Card
PCI 3D Stereo Sound O/B	PCI 3D Stereo Sound O/B
10/100 Base NIC	10/100 Base NIC
PS/2 Internet Keyboard	PS/2 Internet Keyboard
PS/2 Wheel Mouse	PS/2 Wheel Mouse
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Power Amplified Speakers	Power Amplified Speakers

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Dual DDR

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Value

Intel P4 3.06 GHz \$1299 AMD XP 2500+ \$729

Intel PIV-3.06 GHz CPU (Hyper Threading)	AMD XP-2500+ CPU (Barton)
Asus P4P800 M/B (FSB800, Dual DDR)	Asus A7N8X (Dual DDR) Motherboard
512MB PC2700 DDR RAM	512MB PC2700 DDR RAM
1.44MB Floppy Drive	1.44MB Floppy Drive
80GB (7200rpm) EIDE Hard Drive	80GB (7200rpm) EIDE Hard Drive
52x24x52 EIDE CD-RW	52x24x52 EIDE CD-RW
MSI GeForce4 Ti4800SE 128MB V/C	GeForce FX 5200 128MB V/C
PCI 3D Stereo Sound O/B	PCI 3D Stereo Sound O/B
10/100 Base NIC	10/100 Base NIC
Microsoft Optical Mouse	PS/2 Internet Keyboard
Microsoft Multimedia Keyboard	PS/2 Wheel Mouse
18" ATX Tower Case w/Power Supply	18" ATX Tower Case w/Power Supply
Altec Lansing AVS300 Speakers	Power Amplified Speakers

Hyper
Threading

Barton CPU
Dual DDR

Motherboard

AMD Asus A7V8X-X KT400	\$95
AMD Asus A7V8X-WL KT400	129
AMD Asus A7N8X Dual DDR	155
AMD Gigabyte GA-7VAX KT400	110
AMD Gigabyte GA-7VXP 1394	145
AMD MSI KT4V-L KT400	99
Asus P4S533-X SiS645DX	90
Asus P4PE-L i845PE DDR333 LAN	139
Asus P4SDX SiS655 Dual DDR	165
Asus P4G8X-DX Dual DDR	239
Asus P4P800 i865PE Dual DDR	179
Asus P4C800-DX i875P Dual DDR	279
Gigabyte GA-8PE800 i845PE	110
Gigabyte 8SQ800 SiS655 1394 Dual DDR	125
MSI 64SE-Max-U	80
MSI 64SE-Max-L	110
MSI 865PE Dual DDR400	150

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Asus GF4 MX440 8X 64MB	109
Asus GF4 Ti4200 8X 128MB	190
Asus GF4 Ti4800SE 8X 128MB	240
Asus Geforce FX5200-Mag 128MB	119
Asus Geforce FX5600-TD 128MB	270
ATI Radeon 9000 128MB (OEM)	109
ATI Radeon 9200 128MB (OEM)	129
ATI Radeon 9800 Pro 128MB (OEM)	579
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17" Samsung 753DF .25dp Flat 1280*1024	189
19" NEC FE991SB .25dp Flat 1792*1344	390
19" Samsung 955DF .25dp Flat 1600*1200	309
19" MAG 996PF .25dp Flat	250
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HP 300i DVD+RW (Box)	339

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Logitech Optical Wheel Mouse	17
Aopen 56K internal Modem	17
Aopen 4 Port 10/100Mbps Switches	28
D-Link 10/100 Network Card	12
RJ45 Network Cable 10/20/50 ft	\$3/5/10

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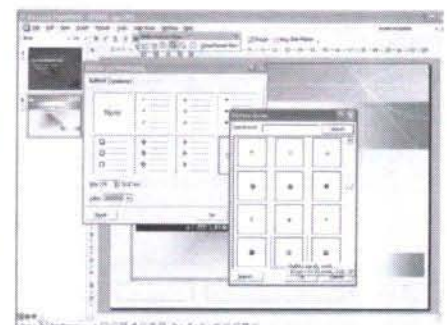
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Formatting PowerPoint slides

Continued from page 48

image you'd like to use, from inside the Picture Bullet dialogue, click Import Clips, add the image to your clip gallery, then select it as the custom bullet.



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Helen Bradley specializes in writing hands-on tutorials. Her columns appear regularly in a number of publications in Australia, the U.K., and the U.S. Contact Helen at helen@helenbradley.com.

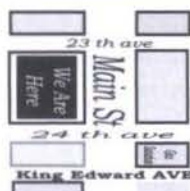


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1.44M FDD / 10/100 NIC OB

On-Board 3D Graphic Power

17"ATX Tower Case with 300W

Win Keyboard / Scroll Mouse

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GF2 MX400 64M SDR AGP4X

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1.44M FDD / 10/100 NIC OB

GF2 MX400 64M SDR AGP4X

17"ATX Tower Case with 300W

Win Keyboard / Scroll Mouse

180W Stereo PC Speakers

MAG 17" Flat Monitor — \$165

52x24x52 CDRW — \$57

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AMD XP 2600 + CPU

Asus A7V8X-X AGP8X MB

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16x DVD + Power DVD Software

1.44M FDD / 6 channel Sound

GF4 MX440 128M DDR AGP8X

10/100 Network Card Integrated

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Media Keyboard / Optical Mouse

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MAG 19" Flat Monitor — \$239

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XP Gamer

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Gigabyte GA8S080 AGP8X MB

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80GB 7200rpm ATA133 HDD

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1.44M FDD / 6 channel Sound

GF4 MX440 128M DDR AGP8X

10/100 Network Card Integrated

17"ATX Tower Case with 400W

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Altec AVS300 Speaker+Subwoofer

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Creative 4400 Speaker+Subwoofer

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ECS P4VXASD2 / P4VMM2(533)	\$77 / \$83
ECS L4S8A2 / L4IPEA2	\$105 / \$105
Gigabyte 8IPE1000 / 8IPE1000P	\$139 / \$164
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Gigabyte GA 8PE800 / 8SQ800	\$116 / \$115
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MSI MAX-U / Neo2	\$88 / \$139

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Asus A7N8X-DX / A7N8X	\$183 / \$153
ECS K7S5A Pro / K7VMM2+	\$62 / \$79
ECS K7VMM DDR + 1600Pro CPU	\$115
ECS K7SEM 256MB SDR + 1800Pro CPU	\$139
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Philips 180B2S 18" TFT	\$799
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Creative SB Audigy 5.1 oem	\$89
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Creative Audigy 5.1 Gamer box	\$117
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Creative Audigy2 box	\$158
Creative Audigy2 Platinum	\$238
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Altec 2100CN (3pcs) Black	\$110
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Creative 4400 (5pcs) Black	\$58
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Asound 180W Speaker	\$5
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ESS 56K Data Fax V90 Modem	\$15
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DDR333 - 256MB / 512MB	\$39 / \$79
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Asus GF4 T4800se 128M DDR DVI+TV-OUT AGP8X	\$245
GF2 MX400 64M SDR / GF4 MX440 64M DDR	\$46 / \$58
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Radeon 9000 Pro 128M DDR w/ DVI + TV-OUT AGP4X	\$105
Radeon 9200 128MB DDR w/DVI + VIVO AGP8X	\$129
Radeon 9600 Pro 128M DDR DVI + TV-OUT AGP8X	\$255
Radeon 9700 128M DDR DVI + TV-OUT AGP8X	\$369
Radeon 9700 Pro 128M DDR DVI + TV-OUT AGP8X	\$469
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MSI GF4 FX5200 256M w/DVI +TV-OUT AGP8X	\$297
Eagle GF4 MX440 128M w/ TV-OUT AGP8X	\$97
Eagle GF4FX5200 128M w/ TV-OUT AGP8X	\$115

Triple (and quadruple) threats*Continued from page 36*

one-touch operation, but the LCD menu steps you through it).

This model also has a built-in fax modem, allowing you to send and receive faxes even if it's not connected to a PC. The modem transfers data at 33.6 Kbps, so you can send colour faxes a lot more quickly to compatible 33.6 Kbps machines. About the only downside here is the cost: at \$699, it's the most expensive machine in the roundup.

Hewlett-Packard OfficeJet 6110

From: Hewlett-Packard Company, www.hp.ca

Estimated price: \$500

Cartridge prices: \$30 (black), \$52 (tri-colour), \$38 (photo)



Moving up the HP multifunction line to something that will satisfy a busier, more demanding group of employees, we have the OfficeJet 6110. It definitely has more features than the other HP machines in this roundup, including a 35-page sheet feeder and full onboard fax component.

The control panel and menu system has also been greatly enhanced for the 6110. It starts with the included template label, indicating the various button commands, which comes in separate French and English versions—just snap on the version you prefer. The onboard menu system is also quite powerful, giving you great control over PC-free print output,

including commands for transparency and iron-on transfer printing. Not all of the options are one-touch, but the menu makes it pretty easy to navigate through the panel buttons.

The print quality is, as expected, top-notch. And though it's fairly slow in highest quality mode, it can certainly crank sheets out quickly in draft mode. (For better photograph printing, you can replace the black ink with an optional photo cartridge.) The 6110 has a built-in 33.6 Kbps modem for speedy transfer of colour faxes (provided there's a compatible machine on the other end, of course).

Lexmark X6150 / X6170

From: Lexmark Int. Inc., www.lexmark.com/canada

Estimated price: \$299 / \$399

Cartridge prices: \$53 (black), \$60 (colour), \$74 (high-yield colour)



At the high end of Lexmark's all-in-one inkjet line, the X6150 and X6170 both offer a lot of functionality at very competitive price points. Both models feature speedy printing, built-in 33.6 Kbps fax modem, USB 2.0 connectivity, and an excellent menu system on the front control panel. The main difference between the two models is the X6170's 50-page automatic sheet feeder.

Setup of both models is quick and easy: lift the lid, unlock the scanner, insert the cartridges, then let the LCD

menu system step you through various configurations after you lower the lid.

The menu system on the printers is very powerful: there are three "mode" buttons for one-touch switching between copying, scanning, and faxing. Once you've selected a mode, you can copy, scan, or fax in colour or monochrome with one more touch of a button. The options menu gives you a lot of control over PC-free output, including the ability to print to transparencies and multi-up printing (allowing you to fit up to 16 pages onto one physical sheet). As with the X5150, the X6100 series allows you to scan directly into a selected application from the printer's LCD panel, instead of forcing you to do so from the software control panel on your PC.



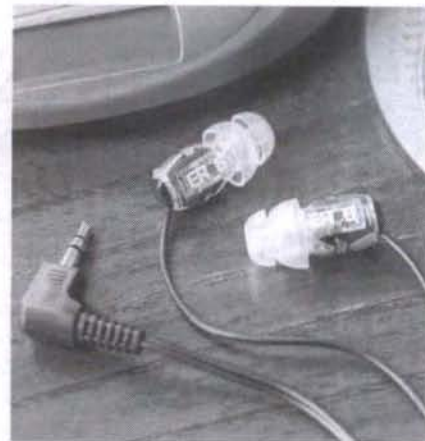
The quality of the prints is excellent. As with the other printers at this level, the best quality mode takes a while when it comes to printing photographs, but in draft mode you'll achieve much faster speeds.

While both machines are excellent, the auto-document feeder on the X6170 will make it more attractive to those who send a lot of faxes or regularly copy multi-page documents. While it does add \$100 to the cost of the machine, it still comes in at a more attractive price point than many of the other printers with document feeders onboard. □

WHAT'S NEW

Continued from page 38

Listening to portable music in an urban environment, with a lot of ambient noise, usually requires volume levels that can have dangerous long term effects on hearing. One solution is to hiss "Shush!" at everyone within earshot. Or if that doesn't work, you might want to consider earphones that block out some of the ambient noise. **Etymotic Research** (www.etymotic.com) recently released a set of earphones that seal into the ear and block out 15 to 20 decibels of external noise, according to the company.



The **ER-6 Isolater Earphones** come with a carrying case, a 3.5-mm stereo plug, and replacements for the ear tips and filters. An adapter is available to make the earphones work with the double prong system found on many airplanes. At \$198, they're definitely more expensive than the shushing option, but the latter has been known to backfire, as people sometimes get angry and start to yell. □

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- Anandtech.com May 6th, 2003



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Beyond Expectations

Macs can no longer just talk amongst themselves

By Emru Townsend

A few weeks ago, someone sent me an email about this series, taking me to task for a sin of omission. Namely, that so far I've been fairly glib about moving files between PCs and Macs. It's all very well for me to say you can transfer your email settings from Windows to Mac OS by simply copying the files and following some steps, she said, but how do the files get there?

I admit I've been coy in this area, and kind of hoping no one would notice until I got around to this installment. (Oh, I was so close!)

If you visit Apple's Web site and check the Switch section (www.apple.com/switch), you'll see that it mentions burning a CD under Windows with your files, and then reading it on your Mac. If your files aren't too large, I'd even suggest copying them to a portable hard drive or USB keychain drive and transferring them that way—it's fairly quick and painless.

Of course, these are only temporary measures. If you plan to do more than copy the occasional file, you'll want to make use of a network.

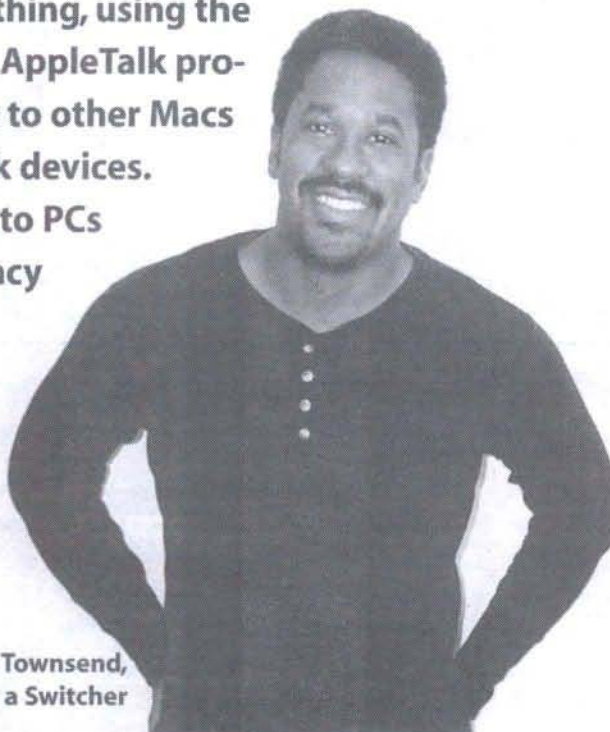
In the past, Apple pretty much did its own thing, using the proprietary AppleTalk protocol to talk to other Macs and network devices. Connection to PCs required fancy footwork (which I'm glad I never experienced). If you open the Network window in the OS X System Preferences, you'll see that AppleTalk is still there, on a tab between TCP/IP and AirPort. Clearly, things have changed. (AirPort, by the way, is Apple's name for the 802.11b, or Wi-Fi, wireless protocol; AirPort Extreme refers to 802.11g.)

All Macs come with built-in RJ-45 Ethernet port, so physically connecting to an existing network is a simple matter of getting a cable and plugging it into your Ethernet hub. For my tests, I was connecting to a single computer without a hub, so I used an Ethernet crossover cable and plugged it into my PC's Ethernet port.

As you can imagine, setting up a wireless connection is fairly easy if you have an AirPort card installed. The first step is to make sure everything is ready to go. Go to System Preferences, choose

In the past, Apple pretty much did its own thing, using the proprietary AppleTalk protocol to talk to other Macs and network devices. Connection to PCs required fancy footwork.

My name is Emru Townsend,
and I'm a Switcher



Network, and click the TCP/IP tab; make sure the Configure option is set according to your network configuration (if you're not sure, you should probably set it to Using DHCP).

Next, click the AirPort tab. On top is the AirPort card's MAC address, in case you need it (Apple calls it the AirPort ID). Then you're given three choices: to join the network with the best signal, to join the most recently used available network, and to join a specific network. Underneath that is an option I consider essential: to show the AirPort status in the menu bar.

The easiest way to join a wireless network is to choose one of the first two options and let the Mac find your network; if it needs a WEP key as a password, you'll be prompted to enter it. Curiously, however, automatic detection didn't work for me the first time. My wireless network has been up and running for quite some time, and I've always been able to use it from any point in or near the house. Yet, when I set the iBook down right next to my main computer's 802.11b adapter, it insisted there was no network to be found.

There are two possible ways to manually enter the information necessary to

connect to a wireless network. One is through the System Preferences. On the same AirPort tab I mentioned before, you can choose the third option, to join a specific network by entering its name and a password. The other way is through the AirPort status icon in the menu bar (see, I told you it was useful): click on Open Internet Connect from the menu, and you'll get an AirPort dialogue that shows you if the AirPort card is on or off, what its signal strength is, and whether you're connecting to an ad-hoc (computer-to-computer) network or through a base station. Once you've verified these settings, you can enter the network name and password by clicking the Network box.

Whether you go through System Preferences or the AirPort icon, entering the name and password should be the easy part. Unfortunately, that didn't work out for me either. Although the iBook found my network, I couldn't actually connect to it. I spent over a week reentering the WEP key, combing through Apple's knowledge base, querying the occasional Mac guru and spending time on the phone with Apple.

I was just short of pulling all my hair out and/or throwing the iBook out the

window when I happened upon an article about wireless networking with a Mac—and there was the solution no one else had been able to give me. Simply: if you are connecting to a Windows-based 802.11b network, you must prefix 40- or 64-bit WEP keys with a dollar sign (\$); otherwise, prefix the key with a number sign (#).

And just like that, I was connected.

Share and share alike

Wired or wireless, the process of sharing files is the same.

Before you can access folders on your PC from your Mac, you have to share them on the network; right-click on a folder, choose Sharing and Security (or just Sharing, depending on your version of Windows), and go through the options. Then it's a simple matter to establish the network connection.

1. Go to the Go menu in the Finder and choose Connect to Server.
2. Select the PC's computer name, then click Connect. (You may see the workgroup name, rather than the computer name; click the workgroup name to make the computer name appear.)
3. Enter your username and password if necessary.
4. A dialogue box will appear asking about an SMB Mount. Select the folder you want access to, then click OK.
5. An icon will appear on your desktop with the name of the shared folder.
6. Repeat these steps for every folder or printer you want access to.

(If you've been observant, you'll notice that the fourth step isn't the first time you've seen the initials SMB; when you clicked on the computer name in the Connect to Server dialogue, at the bottom it read something like "smb://xxx.xxx.xxx.xxx." SMB is a Unix resource-sharing protocol, and Samba is one of the most popular programs that uses SMB. I only mention this because you'll be seeing the name Samba again soon.)

If you want to go the other way and access Mac folders from a PC on the network, verify that you have an account that can accept a Windows connection. Go to System Preferences, choose Accounts, and make sure that the

Continued on page 62



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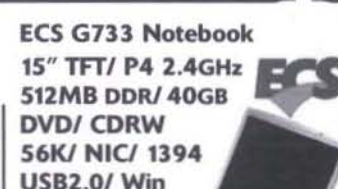
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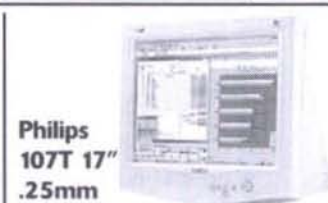
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Smaller iPods get capacity boost, iTunes upgraded



Justin Siemens
APPLE NEWS

This month, Apple has released faster versions of its iBook consumer laptop and eMac consumer desktop lines. The updates mean both lines get faster processors and lower prices, but no major changes were made. But the interesting news, which we touched on in June's What's New, was in Apple's audio offerings, so let's hear about those first.

Facelift for iPod, iTunes 4.0 released

Apple ended months of speculation in late April by releasing new iPods and launching an online music service—the iTunes Music Store. As we reported last month, the download service is only available to customers in the U.S. at this time, but the new iPods and iTunes 4.0 software are available immediately.

The new iPods—in 10, 20, and 30 GB capacities—are completely different

than the original models: much thinner and lighter and sporting a new interface. There are no mechanical buttons on the front surface, the controls are now all touch sensitive. The four buttons that surrounded the scroll wheel on the old iPods are now positioned under the screen, and glow red when the screen backlight is on. When placed next to a first generation iPod, the new models appear to be about half the size, but are in really only about one-third smaller (the 30 GB version is thicker and heavier than the other two).

In the past Apple listed the number of songs based on MP3 compression with a bit-rate of 160 Kbps and an average song length of four minutes. This meant the 5 GB model could hold about 1,000 songs, the 10 GB about 2,000 songs, and the 20 GB iPod up to 4,000 songs. Now that iTunes supports the AAC format, Apple estimates the song capacity of the iPods based on AAC encoding with a bit rate of 128 Kbps. Music encoded in this format, even at the lower bit rate, is claimed to sound better than 160 Kbps MP3s,

almost as good as 192 Kbps MP3s, and more songs will fit in the same space. Based on this format, Apple estimates that the 10 GB iPod can hold about 2,500 songs, the 15 GB model 3,700 songs, and 7,500 songs for the 30 GB iPod.



You still get a carrying case and remote control with the two larger capacity iPods, as well as a dock that can charge the battery, sync with your computer over FireWire or USB 2.0, and features a line out for running to a stereo.

The dock will be available separately for the 10 GB model.

Prices drop slightly, although it's mostly due to the rising Canadian dollar. The \$479 5 GB iPod was replaced by the 10 GB model at \$459; the \$629 10 GB iPod was replaced by the 15 GB model at \$599; and the \$799 20 GB iPod was replaced by the 30 GB model for \$749. Overall, the new iPods give you 50 to 100 percent more storage for \$20 to \$50 less.

In addition to the new iPod OS 2.0, Apple has introduced a new higher resolution screen that allowed it to change the interface. The new iPod has a customizable menu system, allowing users to move frequently used items to the main menu. Other changes to the new OS include the ability to create play lists on the iPod, as well as the ability to rate songs on the iPod and sync that info back into your iTunes on your computer.

There are several new games (including Solitaire), and in addition to iCal and Address Book syncing, you can now

Continued on page 58

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Smaller iPods get capacity boost*Continued from page 56*

transfer text notes and read them on the iPod screen. The new iPods are available now, though availability of the 30 GB model will be constrained for the first month due to supply issues.

There are no longer Mac or Windows versions of the iPod, which is good for retailers who had trouble balancing stock between the two. Every iPod box now includes all the necessary cables to use the device with FireWire on a Mac or PC, as well as iTunes 4 and Music Match Jukebox software. The USB 2.0 cable for iPod will be available later in the summer and will allow Windows users without FireWire to connect the iPod to their PC.

The second part of Apple's announcement revolves around iTunes 4, which is a free download for all OS 10.2 users. As noted above, the upgrade includes support for the AAC, which was developed in part by Dolby.

The upgrade also includes the iTunes Music Store, which allows users to buy music online from Apple and download it directly into their iTunes library. The

music is compressed in AAC format, and for each song in the store there is a 30-second preview so you can listen before buying. Once you purchase the song, you are given certain digital rights: you can play the song on up to three Macs, and you burn it to CD as many times as you like. You can also store the song on as many iPods as you like.

The music you purchase from Apple includes cover art from the album, which can optionally be displayed in iTunes 4 while the track is playing. However, it is currently only available to U.S. customers, so we haven't been able to test it out. Canadians can connect to the store in iTunes 4 and listen to the previews, but a U.S. credit card is required to make a purchase. The cost is very reasonable at US\$0.99 per track, or US\$9.90 for a full album. We'd like to see something like \$1.29 per track in Canada and \$12.90 for full albums.

The iTunes Music Store will be available to (U.S.) Windows users sometime before Christmas, when Apple releases a free version of iTunes for that platform. (Hopefully, the service will be available to Canadians by then.) This is a monu-

mental step for Apple, as it's the first time it has ported one of its iApps to Windows.

Even without the Music Store, iTunes 4 is a great upgrade, and you can, of course, use the built-in AAC encoder to create your own AAC files. You can also add in your own album art to songs in your library.

EMac update

The new eMac line includes three models, up from two, and the speeds now range from 800 MHz to 1 GHz. Prices have dropped by several hundred dollars on each model. You can now buy an eMac for the price of a G3 iMac before it was discontinued several months back. At \$1,199, the base eMac now includes an 800 MHz G4 processor, 128 MB RAM, 40 GB hard drive, and a CD-ROM drive. It also has all the standard interfaces: three USB, two FireWire, and an Ethernet port, a modem, and optional AirPort. The new eMacs now support AirPort Extreme, which operates at 54 Mbps.

The new line maintains the design of earlier eMacs, and since this is a speed

bump and not a new model, they should still be able to boot into Mac OS 9.



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The two higher-end models are both powered by 1 GHz G4 processors and buyers have a choice of optical drive. The \$1,499 model has 128 MB RAM, a 60 GB hard drive, and a combo drive (CD-RW/DVD-ROM). The \$1,899 eMac bumps the RAM up to 256 MB, has an 80 GB hard drive, and a SuperDrive

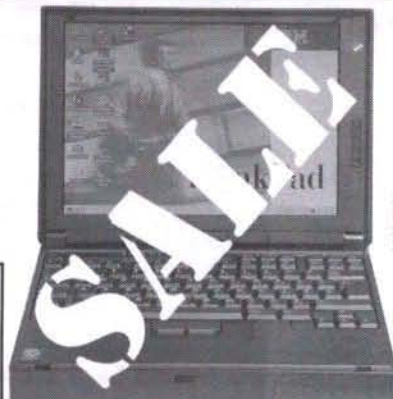
Continued on page 62

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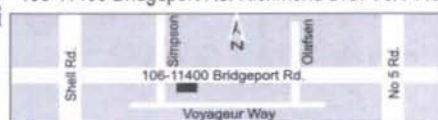
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Aunt Abigail creates order from photo chaos

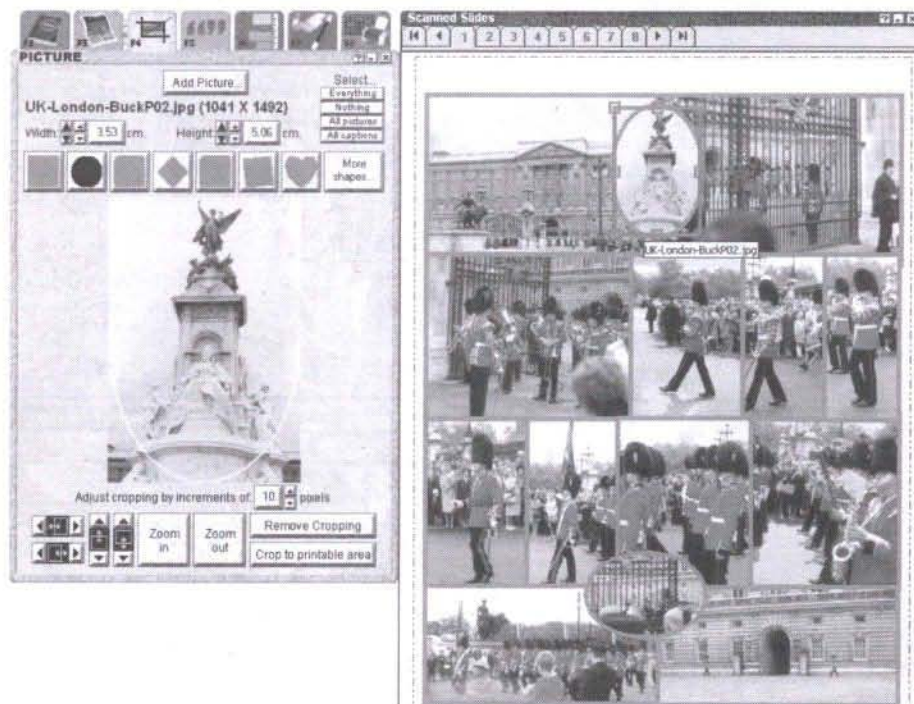
By Marvin D. Silbert

A few days ago someone sent me a set of digital photos of their new baby. Last week it was a work-related set showing a number of failed heat-exchanger tubes. I receive these sorts of collections all the time, and they rarely come with names that indicate the subject matter. This can make finding them and organizing them for printing a real pain. So, they tend, for all practical purposes, to be looked at once then filed away and often forgotten and lost. This is not a satisfactory way to send digital pictures.

Aunt Abigail's Photo Album

From: Aunt Abigail Software, www.auntabigail.com

Price: \$45.99



dows: the one on the right shows the page you are producing and the one on the left is used for editing. A number of tabs on the editing window allow you to select particular tasks such as cropping, rotation, conversion to black and white, placing a matte around the image, adding a caption, and adjusting the brightness, contrast, or sharpness.

You start by selecting an image and then manipulating it on the page. An individual album page may contain files from a single image or from multiple image sets from many sources. Auntie does not alter your images. She allows you to edit them, then stores all the editing and placement information about your album pages in a database file. As that database references (but does not alter) the individual graphics files, it is very important that those image files never move once they have been incorporated. To help you find those files in the future, you can set the screen to display the filenames. Although Auntie stores a back-up copy, it would be a good idea to keep an updated copy of the AAPhotoAlbum.mdb file (468 KB) in a separate location.

My first test was to see what I could do with a set of 10 digital photos that were sent to me from an industrial plant. Going to the Add Picture tab, I selected all 10 and they came in together. I adjusted the size of one and then told the program to make them all the same size.

I placed them where I wanted them and went to the Align tab, to ensure that the tops, bottoms left and right sides were all straight. This only took a couple minutes and might have taken at least an order of magnitude longer with PowerPoint. The speed with which I could add captions was essentially the length of time it took to think of what to write and type it in.

It took about 10 minutes to get those images on a single page, complete with labels. I could view this page on screen, print it out with my laser and inkjet printers, use Adobe Distiller to make a PDF, or just save it as a JPEG or other graphic format. Once you have that file, you can send it to others in a form they can view with ease.

Let's face it, when you're sending digital photos to others, it's common courtesy and good business practice to arrange and label them instead of just dumping a pile of files and leaving all that up to the recipient. This PDF option can also be used to prepare slides for a presentation.

My next test used a series of pictures to build up a description of a piece of equipment and how it operates. This one was a composite of figures from a variety of sources. Some were from digital cameras, some were downloaded from the Web. Others were taken from 35 mm slides and brochures that were scanned into JPEGs. There was no difficulty mixing and matching them on the same page.

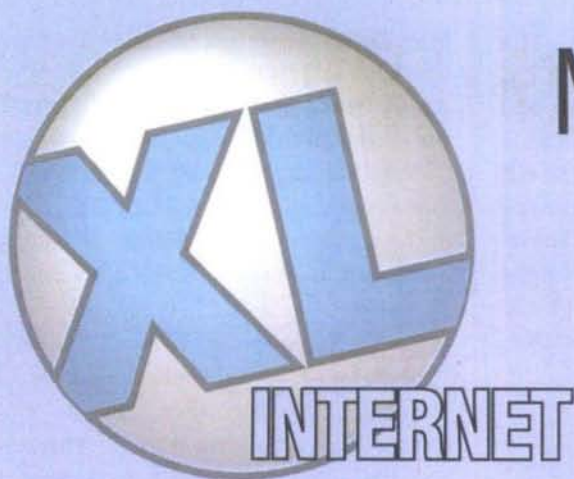
I gained two very valuable lessons going through this exercise. First, if I could make such an interesting collection from those images, I could assemble enough pictures from the Web to make a photo collection from a trip I made to Hawaii a few years ago without my camera. So, I used both Google and AllTheWeb to locate pictures and, over a few hours, managed to collect enough pictures to make a complete photo collection for that trip. I must have succeeded here as people were highly impressed with my photo album and no one realized I didn't take any of the shots myself.

Next, if I could do that with Web images, what could I do with those thousands of colour slides I haven't looked at in years? Let's face it, the days of sitting in the dark in the basement looking at slides are long gone. In the old days, we used to look at them one by one and a slide show could take a lot of time. Who among us has not drifted off into the land of nod from the combination of darkness, good food, and drink coupled with a boring presentation?

My scanner can do transparencies at 600 dpi. That's not good enough for full-page prints, but it is adequate for wallet-sized printing. I fired up the scanner and went through a few dozen slides to see what I could find, and started to assemble them into a few pages with Auntie. Instead of viewing them one by one, I could assemble them into a mosaic, with as many as a dozen images on a single page to tell the entire story. With a bit of tinkering to get the most pleasing layout, it took about five minutes to assemble each page. This was an entirely new way to look at those slides, and I found it was rather exciting to relive some of those old trips and family activities.

Is there a negative with Aunt Abigail? There sure is. Now that I've been tempted to resurrect all those old slides, when am I ever going to find enough time to scan them all? I have thousands. If I do get rolling, where will I find enough hard disk space to store them all?

Version 1.2 solves the storage problem with a utility that allows you to transfer those big file sets to CD and recover them when you need to. You can also use that utility to move files around if you decide to change their locations. □



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eSystems

Smaller iPods get capacity boost

Continued from page 58

(CD-RW/DVD-RW).

All eMacs include a built-in 17-inch flat CRT monitor and a Radeon 7500 graphics card with 32 MB of RAM (the previous eMac lineup used the GeForce 2MX). This Radeon card should be a bit faster than the GeForce, but it's not likely to make a huge difference. The specs of the top model are similar to the previous high-end eMac, but the price is \$400 lower and the CPU 200 MHz faster.

The Combo drive model should be popular with home users, due to its mix of speed, features, and low price. The SuperDrive eMac is still the cheapest way to burn DVDs on a Mac, and the 1 GHz CPU will certainly appeal to gamers.

iBook

The new iBook lineup changes even less. There are still three models and the price drops are smaller than for the eMacs, though still \$100 less than the models they replace. The main changes are that the CPU in each iBook is 100 MHz faster, the hard drives 10 GB larger, and they now all ship with the opaque plastic

case—which we find much less attractive than the older translucent “ice” models.

The choice of optical drives has not changed (still no SuperDrive) and the iBooks have the older, slower version of AirPort—which is odd since the eMac was upgraded to AirPort Extreme and you'd think wireless connectivity would be much more useful in a laptop.



The low-end iBook drops to \$1,499 and includes an 800 MHz G3 processor, 12.1-inch LCD, 128 MB RAM, 30 GB hard drive, and a CD-ROM drive. The 12.1-inch Combo model is \$1,999 and includes a 900 MHz G3 processor, 128 MB RAM, 40 GB hard drive, and a CD-

RW/DVD-ROM Combo drive. The 14.1-inch iBook comes in at \$2,299 and includes a 900 MHz G3 processor, 256 MB RAM, 40 GB hard drive, and CD-RW/DVD-ROM Combo drive. A 60 GB hard drive upgrade is available from the Apple Store for \$80 on the Combo drive models. Maximum RAM in the iBook remains 640 MB total, with 128 MB on board and one available expansion slot.

Another notable feature is that the low-end model of the iBook line used to have half the video memory of the other two, but Apple has included a 32 MB Radeon 7500 Mobility graphics card on all three models. Also, the Combo drive on these new models is a faster version that writes CDs at 24X (up from 16X) and rewrites at 10X.

Aside from the cosmetic issues, these new iBooks represent a good value, especially for students. We expect them to sell well through the summer and, as with previous generations, the 12.1-inch Combo model will probably be the most popular choice due to its small size and weight and attractive price point. □ Justin Siemens is a Vancouver-based Mac IT specialist. You can reach him at jsiemens@mac.com.

Macs can no longer just talk...

Continued from page 54

account you want to use has the option for logging in from Windows checked.

Now you can establish the network connection.

1. Go to System Preferences, choose Sharing, then click on Windows File Sharing.
2. On the PC, open My Network Places or Network Neighborhood, click on Entire Network, then Microsoft Network, then Workgroup. There you'll see an icon named Samba something-or-other (the exact name depends on the version of Samba and the name of your Macintosh); that's your Macintosh.
3. Double-click the icon and log in with your name and password.

You should now have access to your account's home directory on your PC.

The easy way

If you consider this just a little too much work, there are companies that would be only too happy to streamline things for you—and throw in a few extra features. More on that next month. □

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Flash 5 MX Academic	Hot Shots Golf 3	Enter The Matrix	Diablo
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Toolbar, menu tricks for Word

Move toolbar buttons • You can move the buttons from one visible toolbar to another by holding the ALT key as you drag the button from one toolbar and drop it onto the other toolbar. The same process works if you want to move a button to a new position on the same toolbar. To copy the button, hold ALT + Control as you drag it. To remove a button from a toolbar, hold the ALT key as you drag it away from the toolbar and drop it in the editing area.

Styles on toolbar buttons • Add your favourite styles to toolbar buttons to make them easier to access. Begin by formatting a paragraph in the desired style. Next, right-click any visible toolbar and choose Customize, Commands tab, and, from the Categories list, select Styles. In the Commands list, locate the style and drag it up and onto a toolbar. Right-click the new button and alter its name, if required.

Delete a menu command • To remove an item from a menu, press ALT + Control + - (dash) and the mouse pointer will change shape to a black bar. Click the menu to remove the item. If you make a mistake, you can restore the entire menu bar to its original state (but you will lose any other customizations you've made). To do this, right-click any toolbar and choose Customize. Click the Toolbars tab and locate the Menu bar option. Click to select it and click the Reset button. When prompted, answer Yes if you want to Reset changes made to the Menu Bar, then click Close to finish.

Add a command to a menu • Menus are just like toolbars, so almost anything you can add to a toolbar can also be added to a menu. To do this, right-click a toolbar and click Customize, then select the Commands tab. In the Categories list, locate the category of item you want to add to the menu and, from the Commands list, drag the item up and hover the mouse over the menu item to add it. Wait until the menu opens. Now drag downwards and watch as the mouse pointer changes to a bar indicating the position the item will appear in the menu. Let go the mouse when the item is in position. You can right-click it to change certain properties if desired.

Reset a toolbar • Similar to resetting the Menu bar, you can reset any toolbar (and restore it to its original look), by right-clicking the toolbar, selecting Customize, Toolbars tab, then locating and selecting the toolbar you want to reset. Click Reset, then answer Yes when prompted to reset, and click Close.

Reorganize the default menu and toolbar settings • By default, the Standard and Formatting toolbars share a single row on the screen and they, as well as the menus, operate so the most-used options show at the top of the menus and the left of the toolbars. Unused options are hidden from the menus until they have been opened a second or two. You can set the toolbars so they have a row each and ensure that all menu items appear in the menus as soon as they are opened. To do this, choose Tools, Customize, Options tab, and enable the Show Standard and Formatting Toolbars On Two Rows checkbox and the Always Show Full Menus checkbox. Click OK to confirm your choice.

Separators on toolbars and menus • You can add a separator bar on a toolbar if you first locate the button that appears immediately to the right of where the separator bar should appear. Hold the ALT key as you drag this button to the right a little way and drop it so it just overlaps the left edge of the next button. A separator bar will appear in the space. To add a separator bar to a menu, right-click a toolbar, click Customize, and open the menu you want to add the separator to. Right-click the button immediately below where you want the bar to go and choose Begin a Group.

Move toolbars • You can copy a custom toolbar that has been created for one template to another so it can be used with this second template. To do this, open one of the templates and choose Tools, Macro, Macros, Organizer, then select the Toolbars tab. Click the Close File button for the file that isn't one of the templates, then click Open File and open the second template. You can now copy toolbars from one template to another using the dialogue options. You can also use this dialogue to copy AutoText entries and Macros.

—Helen Bradley

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Funky formatting using CSS

By Keith Schengili-Roberts

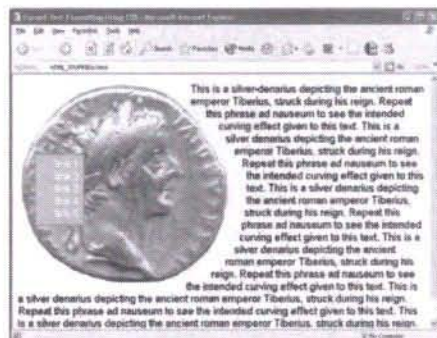
As Cascading Stylesheets (CSS) grow in popularity, they're being put to more and more uses. As many Web developers have discovered, CSS aren't just for making fonts look funky, but can be used to replace tables for laying out columnar formatting for Web pages. (Columnar layout using CSS was covered in a previous article in this series. It can be found at: www.canadacomputes.com/story.asp?id=9216&sb=337.)

But, in addition to creating effective columns, CSS can be used to create other interesting layout effects, as well. This article takes a look at a couple of ways to create some effects with CSS that are not easily achieved, or even possible, using HTML alone.

Curvaceous layout

Who says Web layout has to be boxy? It is possible to create a “curved” effect to text layout using images plus the CSS float and clear properties.

First, you need a curvy image. In the sample code, a largish coin image is used, but anything else with a sufficient curve would do the trick. Now, anybody who has inserted images into a Web page knows that they are always square or rectangular in shape—there's really no such thing as a truly curved image—the image may appear to be curved, but the file itself always takes up a vertical "block." The way around that is to take



the image and slice it up horizontally into strips, preferably the same size or slightly smaller than the font size you intend to use on your Web page. You can use the slice tool available in many graphics programs (like ImageReady or Photoshop) to easily accomplish this. The thing to remember is to start the slice at the edge of the curve and work back to the body of the image, creating a step-like effect that follows the curve of the image.

At the end of this process you should have a series of consecutive files containing the whole curved image.

Now you have to insert the images into a Web page and then add some CSS code. The easiest way to do this is to create a class for the CSS code that is applied to each of the image files. The following line of code placed in the style tags in the header of the page will format all of the images to appear on the left side of the page, and have the text follow it:

```
img.curved {float: left; clear: left; margin: 0 2em 0 0}
```

The float: left property places the image to the left, and clear: left allows whatever text appears on the page to appear immediately after the image. If you wanted the image on the right side of the page instead, you'd use float: right; clear: right (assuming your images slices have a curve facing the left).

What follows—`margin: 0 2em 0 0`—sets a margin of 2ems after the image. This is important so that an overlapping image on a subsequent line is not as likely to overlay text on lines following the image. You could use a more precise pixel value, though using em values has the advantage of being more in tune with the text adjacent to the series of images. (The `margin-left` property could also be used in this case, though adding 0 values to margin ensures that there's no accidental default values for margins on an element, possibly upsetting your formatting. It's picky, but it does work. Also, whenever you set a zero value in CSS, there's no need to add a value of measure after it).

Here's what the whole page using this effect could look like code-wise:

```
<html>
<head>
<title>Curved Text Formatting Using CSS</title>
<style>
body {background: white; font-family: sans-serif; font-
size: 14pt}
img.curved {float: left; clear: left; margin: 0 2em 0 0}
</style>
</head>
```

```
<body>















This is a silver denarius depicting the ancient roman
emperor Tiberius, struck during his reign. Repeat this
phrase ad nauseum to see the intended curving effect
given to this text. ...
</body>
</html>
```

With this, you'll get an image of the coin on the left side of the page with the text "wrapping" around the right side of the successive images. Voila!

A free-floating box

Another effect that is possible using CSS is a free-floating box, which could be used as a navigation menu on a page. The effect uses CSS absolute positioning properties. Quite often you'll see this used on pages using CSS to create a columnar layout, which also rely in part on absolute positioning. This is because

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< ONLINE & CONNECTED >

Funky formatting using CSS

Continued from page 66

the box created is free-floating, sitting above normal text. But you could, for example, overlay such a box over an existing space on a page, such as that occupied by an image.

For example, you could create a dynamic little menu overlaying the image of the coin used in the previous example by inserting the following code between the style tags in the header of the page:

```
div#menu {position: absolute; z-index: 1; width: 5em; top: 140px; left: 35; margin-left: 5px; padding: 0.25em 0 0.5em; border: 3px double #39f; background: silver;}
div#menu a {display: block; color: white; margin: 0; padding: 0 8px; text-align: right; font-face: sans-serif; text-decoration: none}
div#menu a:hover {color: #39f; padding-right: 4px; border-right: 4px solid #39f}
```

The initial line sets up the box; the z-index value ensures it is "on top" of the image, and the rest positions it and formats how it will look. The second line sets up the initial formatting for the menu links it will contain, and the third shows a change in the appearance of the link from white to blue with a thickened, highlighted border to the right when a mouse hovers over a link. All you have to do now is marry it to some equivalent HTML code contained in the body of the page and you have yourself a free-floating box overlaying the image (or images).

The following code shows how this could be implemented:

```
<div id="menu">
<a href="link1.html">link 1</a>
<a href="link2.html">link 2</a>
<a href="link3.html">link 3</a>
<a href="link4.html">link 4</a>
<a href="link5.html">link 5</a>
</div>
```

Keep in mind the size and positioning of this free-floating box depends entirely on the size of the space it overlays—you can expect to adjust your code accordingly to make everything "fit."

Keith Schengili-Roberts welcomes any comments, questions, suggestions, or HTML tips you may have. Email Keith at: robertsk@rogers.com. His latest book on CSS, *Core CSS, 2nd Edition*, Prentice Hall, is due out this summer.



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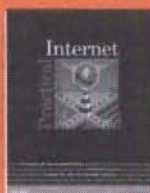
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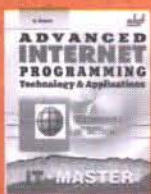
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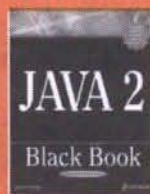
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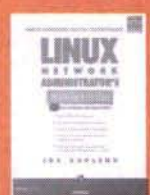


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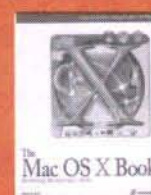
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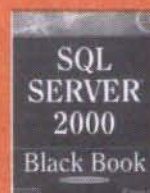
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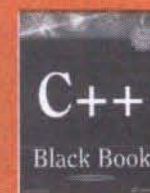
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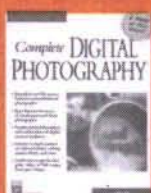
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Why I don't want a DSLR... yet

By Gene Wilburn

Digital single lens reflex (DSLR) cameras are the most coveted items on the photo scene. The recently released Canon 10D broke new ground in pricing and the just announced Pentax *ist D may cost even less. With interchangeable lenses, large sensors, high megapixel count, fast focus, no shutter lag, low noise at high ISO, true through-the-lens optical viewing and creative control, plus the ability to produce great-looking 16x20-inch prints, how could anybody not want one? I want one, of course. I just don't want one... yet.

The factors that temper my desire to plunk down plastic for one of these beauties are cost, lens-cropping issues, size and weight, obsolescence, and return on investment.

Cost

To say the Canon 10D has broken price barriers is not to say the camera is cheap. It simply means the price has dropped from the photo equivalent of Rolls Royce levels down to BMW levels. Any way you look at it, \$2,500 for a camera body with no lens is a luxury purchase. Add a quality stabilized zoom lens and you're quickly looking at at least \$3,500 for the basics, before taxes.

DSLRs create large images, so add a minimum of an additional \$1,000 for storage cards. Round up a few other accessories, batteries, and cases and you're into the \$5,000 range for the low-



est-priced DSLR on the market. This makes the top-end, all-in-one digitals such as the Canon G3, Nikon 5700, Minolta 7Hi, and Sony F717 look downright affordable.

Cropping issues

DSLR bodies are built around 35 mm SLR form factors and take 35 mm SLR lenses. Unfortunately, most current DSLRs contain a sensor that is smaller than a frame of 35 mm film. This introduces cropping. Depending on the sensor, cropping will create a multiplication factor ranging from 1.5 to 1.7, turning a normal 50 mm lens into the rough equivalent of an 75-85 mm moderate telephoto.

Although advantageous on the telephoto side, this creates problems for wide angle. A 24 mm lens equivalent on a Canon 10D requires a 14 mm standard SLR lens. Obtaining serious wide angle coverage is challenging and expensive. Because of the cropping factor, you simply cannot get a 28-200 mm zoom equivalent in a single lens, as you can

To say the Canon 10D has broken price barriers is not to say the camera is cheap. It simply means the price has dropped from the photo equivalent of Rolls Royce levels down to BMW levels.

from some of the high-end, all-in-one digicams.

The technological answer to this annoying cropping issue is simple: build a sensor that is exactly the size of a frame of 35 mm film. That has already been done and the results are stunning. Behold the Canon 1Ds, arguably the finest DSLR money can buy, at just over \$12,000 for the body only.

Size and weight

I prefer small, relatively lightweight cameras to large, heavy ones. The aforementioned Canon 1Ds has the size and heft of medium format gear. The Canon 10D and Nikon D100 models are beefy. The new Pentax DSLR appears from specs to be a smaller, lighter camera, in the Pentax 35 mm tradition. Unfortunately, it has not yet made it to market.

Obsolescence

Digital cameras are like computers: last month's model is old news; last year's model is history. Just six months ago

folks were buying up Canon D60s for a base price of \$3,500 for the body. It is already out of production. And the D60 had quickly eclipsed the previous D30. No one knows the lifespan of these cameras. Will anyone be able to get D30 parts five years from now? Will any technician remember how to repair them? If you tend to own cameras for a long time, the obsolescence issue bids you pause.

Return on Investment

Most professional photographers have no hesitation about getting DSLR gear. It's a business cost that gives them a good return on investment. Pros who shoot thousands of rolls of film per year can quickly recoup film and lab costs by switching to digital. In fact, they often need digital just to compete and stay in business.

But as an amateur photographer, DSLRs give me a poor return on investment. I already own a film scanner and have an all-in-one Canon G2 digital. Between scanned images from my 35 mm Olympus OM-1 SLRs and the excellent images I get from the G2, my digital photography needs are fairly well met. I would enjoy the extra megapixels and clean images of a DSLR, but it's difficult to justify the cost of one.

When DSLR bodies drop in price to what my Canon G2 cost new, I may be ready to move on. Until then, I'd rather be making images than making payments. □

Gene Wilburn is a Toronto-based writer and photographer. He can be reached at gene@wilburn.ca.

Picture Window Pro 3.1: The photographer's photo editor

By Gene Wilburn

Picture Window Pro 3.1

From: Digital Light & Color, www.dl-c.com

Price: US\$89.95

Photoshop 7 is a fine, if sometimes cumbersome, product for editing digital photographs, but have you ever wished for something that would load faster, use fewer system resources, and fully edit 16-bit-per-channel images as well as being cheaper to own and upgrade? Meet Picture Window Pro, one of the least known but most powerful Windows photo editors.

Picture Window Pro 3.1, from Digital Light & Color, is the creation of Jonathan Sachs, co-founder of Lotus Corp and author of the original Lotus 1-2-3. Sachs, a keen photographer, wanted an editor designed specifically for digital photographs without extraneous graphic arts features. Not finding one on the market, he wrote his own.

The result is a feature-rich product with a unique personality and workflow. It's lean, fast, and relatively inexpensive (the standard version is even cheaper at US\$49.95). Picture Window Pro is described as being "written by photographers for photographers," which means it dispenses with features used primarily by advertising and print shops, such as four-colour separations, duotones, tritones, and CMYK editing. It focuses instead on features such as colour balancing, perspective correc-

tion, barrel-distortion correction, chromatic aberration correction, tiled printing, and the usual panoply of photographic necessities—cropping, sizing, curve adjusting, levelling, dodging, burning, masking, spotting, blurring, and sharpening.

When you initialize PWP, the first thing you notice is that it pops onto the screen instantly, ready for use. Photoshop 7, in contrast, is leisurely about loading.

Continued on page 72

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Picture Window Pro 3.1*Continued from page 70*

The next thing you notice is that PWP bears almost no resemblance to Photoshop, Paint Shop Pro, or PhotoImpact. It doesn't walk, act, or quack like Photoshop. There are no layers. Instead, there are transformations. Transformations are the heart and soul of PWP—its essential paradigm. A low-cost Photoshop clone it ain't. It has its own head space and its own integrity.

Transformations

Every action you perform in PWP creates a transformation: a new copy of the image created by the action you've performed. The previous version of the image remains on screen, allowing side-by-side comparisons. This is arguably a more natural way to view changes than Photoshop's preview button.

When you perform a complex series of steps, every step generates its own transformation. Any transformation can be saved as a separate file or interim steps can simply be clicked away without saving. Needless to say, this method of working takes some getting used to



and probably contributes more than anything else to PWP's low profile among digital photographers. It may be too different for comfort if you are already accustomed to working in layers, but bear in mind it's really a matter of style, not substance. PWP, via transformations, gets you to the same end results.

The additional features of the Pro version of Picture Window are monitor calibration software (included), full support for ICC colour profiles, full 16-bit-per-channel editing for 16-bit black and white and 48-bit colour images, specialized colour correction transfor-

mations (incorporating the Color Mechanic engine that is available separately as a plug-in for Photoshop), chromatic aberration transformation, and match reference transformations based on the image of a test target such as MacBeth Color Checker or Kodak greyscale.

The PWP Web site maintains a discussion forum where Sachs and other forum members answer questions about the use of the product. Sachs also responds to product suggestions and provides insights into what new features will be included in future releases. He has revealed that the next

release, version 3.5, will likely contain a denoising and sharpening function equivalent to Neat Image and NIK Sharpener.

Although there are, to the best of my knowledge, no books on how to use Picture Window Pro, there is excellent documentation online. The Digital Light & Color site itself offers a series of tutorials and white papers (worth reading even if you're not using the product). In addition, the noted landscape photographer Norman Koren has published several in-depth PWP tutorials on his outstanding photography Web site (www.normankoren.com).

Overall, this amazingly fast, versatile, low-cost but fully-functional digital image editor is as good, for what it does, as anything on the market. If you are willing to adjust to a non-Photoshop paradigm, eschewing layers, plug-ins, and scripting, it may be just the photo editor you've been looking for. You can download a 30-day evaluation copy of PWP from the DL-C Web site. □

Gene Wilburn is a Toronto-based writer and photographer. He can be reached at gene@wilburn.ca.

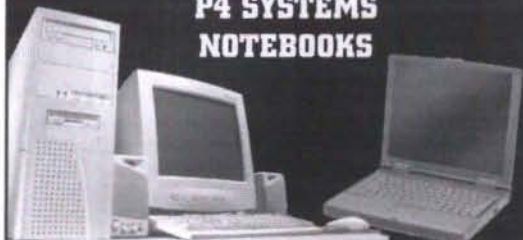
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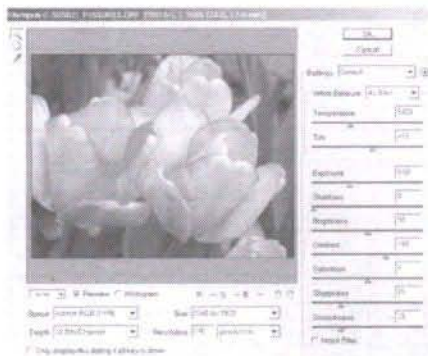
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Photoshop in the raw

If you are an advanced amateur photographer, you may be exploring the "raw" image file format some cameras offer. The raw image file is often referred to as a "digital negative" since it represents data in its raw state before it's handled by the camera's image processor.



There are several benefits to working with raw files. A computer has more processing power than a digital camera so computer-based processing can be more robust. Since some of the camera settings (e.g., colour balance and saturation, image hardness or softness, and contrast) have not yet been applied in a raw file, you can change your mind or make adjustments after you've taken the picture. Raw files offer some protection against obsolescence—as image-processing programs improve, they can be used to process the raw data into better photos. Raw files can also support 16-bit colour, which allows you to start with richer colour information.

The main disadvantage of raw files has

been inconvenience. You need to convert a raw file using special software before you can edit it in an image editor. Manufacturers don't use the same raw format and consequently you must use the converter supplied by the camera maker. Some third-party developers have created converters that work with more than one raw format, and we were intrigued to hear earlier this year that Adobe was developing a raw conversion plug-in that works directly from within Photoshop.

We've been working with a beta version of the Photoshop raw plug-in and it's pretty slick. When you open a raw file, you are presented with a preview pane that has a nice big image window to help you see adjustments in real time. A number of sliders along the side let you adjust various image properties, including colour temperature (in Kelvin degrees), exposure compensation, brightness and contrast, sharpness, and colour saturation. Drop-down boxes along the bottom allow you to set parameters such as the colour space. We could work with Olympus C5050 and Canon G2 raw files, but not the raw files produced by a newer Canon S50 camera. However, we were using beta software, and Adobe says it's committed to supporting every raw format.

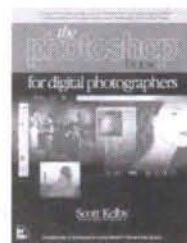
The plug-in will be included in future versions of Photoshop. For now, if you use Photoshop 7, you can download it from the Adobe Web site (www.adobe.com) for US\$99.

—David Tanaka

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A Photoshop guide just for photographers



The Photoshop Book For Digital Photographers

Author: Scott Kelby
Publisher: New Riders,
www.newriders.com
ISBN: 0-7357-1236-0
Softcover, 358 pages, 2003
Price: \$62.99

Photoshop 7.0 is deep and wide, capable of every kind of manipulation you'd care to administer to a bitmap image. Books on Photoshop seldom focus on the tools and techniques from a purely photographic point of view, however, since most have been written for graphic artists in general, not photographers in particular. That's why *The Photoshop Book for Digital Photographers* is such a treat. It covers exactly what the title suggests. You'll find no discussion of neon glowing edges or chrome effects, but you will find lots of information on the kinds of things one might typically want to do with a photographic image.

The book approaches the task from a few directions. Parts of it discuss Photoshop tools and techniques (for example, masks, channels, sharpening) and how they are relevant within a photographic context. Other parts start with common photo manipulation techniques (for example, retouching and general image correction) and how they are accomplished in Photoshop.

There is also some discussion of factors unique to images taken with digital cameras; for example, how to reduce digital noise, a visual flaw often exhibited in underexposed digital images; or the hows and whys of editing 16-bit colour images

that some cameras are capable of creating. The book covers Adobe's recently introduced Raw plug-in, which will be of interest to anyone who uses the raw mode available in some cameras from Canon, Fujifilm, Minolta, Nikon, and others. We found one inconsistency here: the book says you can go to the Adobe site and download the Raw plug-in for free, but we attended an Adobe seminar several weeks ago and were told it would cost US\$99, which is also what the company's Web site states.

A couple of small points: while all of the screenshots in the book show the Mac OS X interface, Windows users needn't worry. Author Scott Kelby points out that the Photoshop interface for Mac and Windows is nearly identical, and he gives both the Mac (combinations of Shift, Option and Command) and Windows (Shift, Control, and ALT) keyboard shortcuts for various procedures. We found the author's asides slightly quirky at times, but easily overlooked considering the wealth of useful information the book contains.

At around \$1,100, Photoshop 7.0 is more expensive than most of the digital cameras being sold today (although if you qualify for the Photoshop upgrade, you only pay about a quarter of that). Whether you, as a digital photographer, really need Photoshop is debatable, especially if you are doing your own printmaking to an inkjet printer and don't need to work within a commercial printing or graphics environment. A less expensive program like Photoshop Elements or Jasc Paint Shop Pro might serve you just as well. But if there's no talking you out of the big 'un, then you owe it to yourself to check out this book.

—David Tanaka

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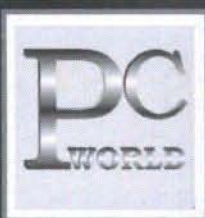
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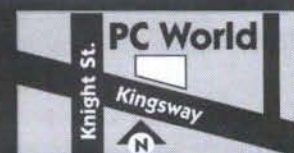


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Five megapixels for big shots

By David Tanaka

Do you need a five-megapixel camera? We found our own answer to that question when we wanted to make a letter-size print of just a small portion of an image we took with the Olympus Camedia C-5050. The whole image, at 2,650x1,920 pixels, would easily make a good quality 11x14-inch print from a tabloid format inkjet. This means you could take just a portion of the entire shot and still make a decent-sized print.

This year, five megapixels seems to be the ceiling for fixed-lens digital cameras (higher pixel counts are available in the digital single lens reflex models that offer interchangeable lenses, but these start at around \$2,500, just for the body). The three models reviewed here are representative of the middle ground, even though they are quite different in design.



PowerShot S50

From: Canon, www.canon.ca

Price: \$900

Canon chose the mid-range "S" line to introduce its first five-megapixel consumer camera, instead of its "G" advanced amateur series. By doing this, it manages to keep the street price below \$1,000, that psychological barrier that causes many consumers to blink.

The S line is a mature one, and if you shopped for a digital camera last year you may have encountered Canon's S30 and S40. Outwardly, the S50 is identical to them, but with several internal improvements.

Canon developed a new image processing system called DIGIC (Digital Image Integrated Circuit) for its EOS 10D digital single lens reflex camera, and the S50 benefits by also using it. DIGIC incorporates a parallel processor that completes tasks faster. This has a couple of benefits, says Canon. More

sophisticated image processing algorithms can be used without slowing down the camera's responsiveness, and processes are computed more quickly overall, which reduces battery consumption.

Another improvement in the S50 is the incorporation of what Canon calls iSAPS (Intelligent Scene Analysis based on Photographic Space). This allows the camera to analyze a scene and predict the optimum settings. The result is faster autofocus and auto exposure performance. The S50 also uses a revised autofocus system called 9-point AiAF, which allows greater latitude in picking an area other than the centre of the scene to establish sharp focus.

The S50 is available in silver or black: Canon Canada sent us the silver model for review (the black model is seen here). It's a sleek but squat design, nearly twice as long as it is tall at 11.2x5.8x4.2 cm (4.4x2.3x1.65 in.) and the all-metal body feels very solid. The camera fits nicely in a jacket pocket and the sliding cover protects the lens without the need for a separate case. Canon nailed image quality down a couple of generations ago, and the S50 photos are very pleasing. Even though it's designed like a point and shoot camera it offers advanced amateur features, such as a good range of manual controls and the option of saving images in raw format.

A few quibbles: Initially, because it's the same height as a shirt-pocket design but as long as a standard camera, I didn't care for the balance, plus the smooth all-metal case feels slippery. I also found the shiny surface of the LCD viewfinder reflected a lot of glare outside.



Camedia C-5050

From Olympus (www.Olympus.com)

Price: \$1,200

Olympus's Camedia C-5050 follows the ergonomic footsteps of the C-4040. It's a variation of the basic rangefinder shape cameras have used for decades. There's no attempt to make it the smallest or the flashiest, but relying on a time-proven design has a major benefit: the C-5050 is extremely comfortable to hold and feels very well balanced. The handgrip, which doubles as the battery compartment for four AA cells (four Nickel Metal Hydride batteries and a charger are included with the camera), is covered with a rubbery surface that, combined with a thumb channel on the back, provides a very secure grip.

The LCD viewfinder on the back is hinged and can swing 90 degrees up or about 30 degrees down. This allows you to compose a shot with your camera higher or lower than eye level, and is so useful, I wish all cameras had it. However, the screen's shiny surface produces lots of glare outdoors. Some manufacturers use matte surfaces on their screens, which improves their readability.

Aimed at the intermediate hobbyist, the C-5050 has a full set of manual controls. There's a thumb wheel just under the main mode dial, and using it in combination with the buttons sprinkled around the surface of the camera allows you to page through various options like the type of autofocus. The camera has a hot shoe for those who want to supplement the built-in flash unit with a more powerful external unit. Another feature aimed at the advanced user is the ability to save files in raw format, often referred to as a "digital negative" file.

The C-5050 has a few unusual features. Even though its sensor contains five million pixels, it has a special mode that will create 3,200x2,400-pixel—or 7.6-megapixel—images. Like some other cameras, it includes a panorama assist mode, which helps you take a series of photos for later stitching into one wide (or tall) image. What's unusual are the safe zone grid lines it places within the LCD viewfinder to help you set the proper amount of overlap from frame to frame. If you have CompactFlash or SmartMedia memory cards from some other device, you'll be able to use them with this model, which also accepts xD cards (a 32 MB xD card

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is included with the camera).

We created some 8x10 prints from the images we took with the Olympus, and even though we used just a portion of the full image, were very pleased with the overall image quality.



Optio 550

From Pentax (www.pentaxcanada.ca)

Price: \$900

The Pentax Optio 450 and 550 form a duo nearly identical in form and close in features. There are a few important differences between the two Optio models, however. The main one is sensor size (five megapixels for the 550, four megapixels for the 450), but they also differ in colour depth (12-bit for the 550, 10-bit for the 450), sensitivity (the Optio 550 goes to ISO 64 while the Optio 450 goes to ISO 100), and file formats (the 550 has three levels of JPEG plus TIFF, the 450 has just three JPEG levels). The 450's brushed silver case is also slightly darker.

The Pentax is the smallest of the three cameras in this roundup but carries the biggest lens—a 5X optical zoom (equal to 37-187 mm in a 35 mm film camera). Having that kind of optical zoom is a rare treat in a sub-\$1,000 camera, especially a five-megapixel one.

The overall design is very clean. Unlike some cameras we've looked at it doesn't go overboard with buttons and dials. There are enough controls to allow you to adjust exposure settings; for example, the camera supports aperture priority, shutter priority and fully manual exposure modes, although serious hobbyists would probably find the greater range of controls on the Camedia C-5050 more satisfying. Also on the plus side, the rear LCD screen has an antiglare coating that improves readability in bright light.

The camera's slick and flat surfaces make it less than ideal to grip securely, but its small dimensions and light

Continued on page 84

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Linux content and virus filtering options

Dee-Ann LeBlanc



LINUX

There are three classes of content and virus filtering options in the Linux world right now. One is for large institutions, such as universities, ISPs, school systems, and corporations.

Another is for smaller organizations like small and home offices or libraries. These two groups need solutions that work at a distance, off a server that scans Web and mail data passing through its doors.

The third group is for the individual user. Sometimes the end user also needs something to work in a centralized manner, especially if they have a home LAN that connects the whole family. Others just want something on their primary machine.

Let's take a look at the various options available for each set of needs. All of these systems offer cross-platform filtering and scanning, since they're really working with the data passing through, not with the end users' computers.

Large institutions

If your institution wants the full meal deal, with everything from Web content filtering to virus scanning, there are options, such as NetSweeper's (www.net-sweeper.com) family of products. This Canadian company offers four options: NetSweeper Education, NetSweeper Enterprise, NetSweeper ISP, and VirusSweeper.

VirusSweeper is maintained in conjunction with Network Associates (www.nai.com), which offers end user solutions such as McAfee virus scanning. Those who don't want to have to set up their own systems can have pre-configured appliances delivered and installed for them, with the option of having an interface allowing them to alter the filtering rules as they need to, or having someone control the filtering remotely for them.

For those who want to focus exclusively on viruses, there's Sophos Anti-Virus (www.sophos.com). With 20 years of experience in protecting computers, this software solution monitors entry points from disks to email gateways and even software downloads. It can scan end user machines, and supports a wide variety of operating systems on the end user side of things.

Virus updates are delivered in plain text, so they can't be exchanged by malicious sorts to nasty executables that will go off when they arrive. The Canadian Sophos VAR is Keating Technologies (www.keating.com), with 15 years of experience in computer consultation and support.

Another option is eTrust Antivirus from Computer Associates (www.ca.com). This solution offers the ability to create various zones that need more or less stringent

protection, and the virus signatures sent as updates are digitally signed to help protect against nasty replacements. It can also integrate with MIMESweeper (www.mimesweeper.com) if you also have the urge to filter based on content. CA has a number of Canadian VARs. You can find them through www3.ca.com/Partners/Channel/Distributors/.

Finally, there's Guardian Digital's (www.guardiandigital.com) Secure Mail Suite. This product is designed for not just standalone use, but for smooth integration into Guardian Digital's EnGarde Secure Linux, a distribution built from the bottom up with security in mind. Rather than only protecting against viruses, you also get help with spam control, among other things.

Smaller organizations

Are you a small or medium business or organization that doesn't have a big budget? One solution to consider is Kaspersky's (www.kaspersky.com) Anti-Virus Business Optimal. This modular solution allows you to choose components to protect workstations, servers, and email Gateways, and block spam. Mix and match as needed.

Another option is Vexira Antivirus (www.centralcommand.com). Both server and workstation offerings are available, with the server choice including macro virus detection along with compressed archive scanning. Regardless of which solution you choose, the software can scan for malicious files on the fly.

There's also SOFTWIN's BitDefender Mail Server for Linux (www.bitdefender.com). This product's smart scanner recognizes that emails destined for multiple recipients

only need to be scanned once, and it supports a wide variety of email servers. There are also special versions specifically for Sendmail and Qmail.

RAV AntiVirus (www.ravantivirus.com) offers both desktop and server antivirus solutions. You also get spam protection, with the ability to forward bulk email to a particular address designated to deal with the problem—allowing you to make sure it's actually spam before tossing it out. Again, this company offers solutions for a variety of email servers, including Sendmail, Qmail, and Postfix.

Home users

Many of the companies discussed above offer versions for the home user. RAV AntiVirus, SOFTWIN's BitDefender, Vexira Antivirus, Kaspersky, and Network Associates—through McAfee—all have something you might want to check out.

The important thing is to do your homework, check out the trial versions, and find the program you trust and that meets your needs.

This is true no matter what level of solution you're looking for. Viruses are a serious matter, and while we're not heavily under their thumb in the Linux world yet, it's only a matter of time before more virus writers decide that it would be super cool to write something that would hit Linux systems. Notice that many of the server and multi-server solutions protect multiple operating systems as well. Here's to safe computing! □

Dee-Ann LeBlanc has written more than 10 computer books, many articles, and taught classes mostly involving Linux and its programs. You can reach her at dee@renaissoft.com.

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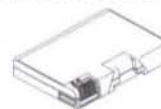
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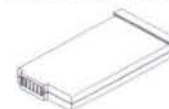
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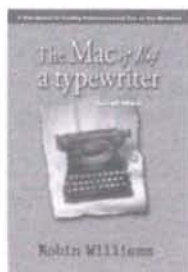
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In review: Mac typography, PowerPoint tutorial

Crash course on typography not just for Mac users



The Mac is Not A Typewriter, Second Edition

Author: Robin Williams
Publisher: Peachpit Press,
www.peachpit.com
ISBN: 0-201-78263-4
Softcover, 88 pages, 2003
Price: \$20.99

There's a generation or two of people who have never used a typewriter and if that includes you, don't worry. This book isn't about typewriters at all, but about how to make the type you generate on a computer look good. Author Robin Williams' zeal for the subject of typography is clear: "I strongly feel it is our obligation—every one of us who uses the computer to create text on a page—to uphold the highest possible level of typographic quality in this changing world."

The reference to typewriters is about the conventions we developed and still use to indicate changes in type—underlining a word to indicate italics, for example—for a

device that could only produce one set of characters. With a computer, we have scores of type styles and weights to choose from, along with special characters and symbols. In short, we have access to the tools that, before the rise of personal computers, were only available to professional typesetters. Nevertheless, the conventions from the typewriter days persist. Enough already, says Williams who proceeds to give a crash course on typography.

The presentation is simple and direct. Williams goes through a list of typographically correct character forms and how to create them on your Mac, but also presents broader issues of style and aesthetics. As the Mac reference in the title implies, the book is written specifically for Mac users and directions for accessing special characters are given using the Mac keyboard (the Option key figures largely here), even though most can also be accessed on a Windows system (albeit not as simply) using the ALT key in combination with other keys or cutting and pasting the character you want using the CharacterMap utility.

Nevertheless even if, as a Windows user, you can't directly use the information on

the keystroke combos, just the overall guidance on typography is easily worth the \$20 cover price.

—David Tanaka

Concise guide provides easy approach to PowerPoint 2002



Teach Yourself PowerPoint 2002

Author: Moira Stephen
Publisher: McGraw-Hill,
www.mcgrawhill.ca
ISBN: 0-07-141957-8
Price: \$20.95
Softcover 2003 154 pages

Rating (out of *****)

Information content	***
Readability	*** 1/2
Overall rating	*** 1/2

Intended for Beginner

The Teach Yourself series prides itself on being concise and to the point, giving the reader the basics on how to get started with a particular program. These slim, pocket-sized books will hold a

beginner's hand as they work through the practical basics of a program. If my mother needed to learn PowerPoint in a hurry, I'd give her this book.

The books in this series read like concise product manuals, taking the reader step-by-step through the most common features and functions, displaying plenty of screenshots along the way to help you accomplish your goal. They assume the reader has next to no knowledge of a given program—even such basic operations as cutting and pasting, common to all Windows programs, is covered here.

That's not to say it's too basic, but it does cover the essentials. It does a decent job of introducing such tools as the drawing and charting features, using tables, clip-art and sound, creating slide masters, and presenting a slideshow. In the end, you are well on your way to creating sophisticated presentations using PowerPoint 2002.

The Teach Yourself titles would make good replacement manuals for any given product, save for the fact that most software these days eschews printed manuals in favour of typically more clunky online versions.

—Keith Schengili-Roberts

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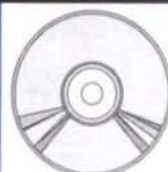
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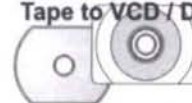
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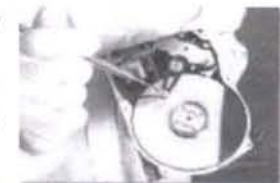
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< DIGITAL PHOTOGRAPHY >

The slideshow goes digital

By Sean Carruthers

One of the nice things about the digital photography revolution is that it's made it very easy to be selective about your prints. You can take a lot of photographs without worry about whether a shot is wasted, because you don't have to spend money for developing, and you can choose which photographs—if any—you want to print out. In fact, many people with digital cameras choose not to make prints at all, viewing the photos only on the PC.



SanDisk Digital Photo Viewer

From: SanDisk Corp., www.sandisk.com

Estimated price: \$110 (converted from US\$80)

Unfortunately, that eliminates one of the joys of photography: showing the pictures to friends and family. It's pretty much a tradition to rush home from the photo shop with a stack of envelopes, then sit in a circle while the prints are handed from person to person. With digital photos, you're often forced to gather around a computer monitor to look at them, which may bring people a little closer together than they'd like.

With the compact Digital Photo Viewer, SanDisk has taken a cue from the past for the solution to this modern problem, the slideshow, but instead of requiring a special projector it uses the main entertainment device in the modern household: the television.

Five megapixels for big shots

Continued from page 77

weight offset that somewhat.

Also it's the only one of the three that doesn't include a raw file format option. It does save images as uncompressed TIFFs, but they are so big you won't be able to save even one on the 16 MB SD card that's included with the camera, plus it takes nearly 30 seconds for the camera to process a shot of that size.

Many manufacturers add special features to distinguish their cameras from their competitors, and in Pentax's case, it's a 3D mode that helps you create

The Digital Photo Viewer connects to your TV using either composite video (RCA) or S-Video output, and has a selector switch on the back allowing you to easily switch between NTSC and PAL formats.

The front of the Digital Photo Viewer has four slots for digital camera media, including Type II CompactFlash (compatible with IBM's microdrive), SmartMedia, MemoryStick, and SecureDigital/MultiMedia Card.

You can take the digital memory card out of your camera and insert it straight into the Digital Photo Viewer, or if you want to create a presentation, select the photos you want on the PC first, then write them to the memory card. You can even use multiple memory cards at the same time, then select the appropriate card using the included remote control.

The remote control offers all the basic functionality you'd expect for a slideshow controller, including the ability to go forward, backward, set up an automatic interval for images to refresh, and to pause a slideshow in progress. It has a few nice digital twists too, like instant reorientation of pictures from landscape to portrait (and vice versa), and the ability to zoom in and pan around an image. Another nice touch is that once you've reoriented a photograph, it will appear in that orientation the next time you view the image on the Digital Photo Viewer. The device can also automatically find the images on your memory cards and create a slideshow for any JPEG images up to six megapixels.

The Digital Photo Viewer makes it very easy to view digital photographs in a more natural way, when you're in a group. Of course, it's still up to you to make the slideshows interesting. □

stereoscopic pictures. The prints carry two nearly identical images side by side. When you look at these in a special viewer (a plastic one is included with the Optio) the illusion of 3D depth is created.

Other choices

We've looked at other five-megapixel cameras this year: the Minolta Dimage 7Hi (\$2,000), Nikon CoolPix 5700 (\$1,500), and Sony DSC-F717 CyberShot (\$1,300) in February, and the Olympus C-50 (\$900) in April. □

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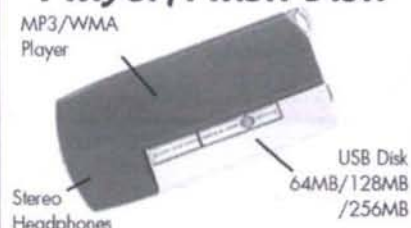
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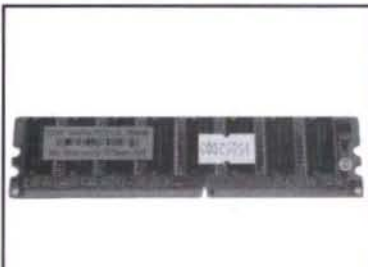
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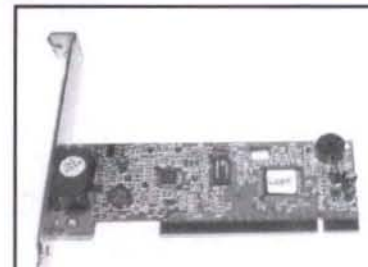
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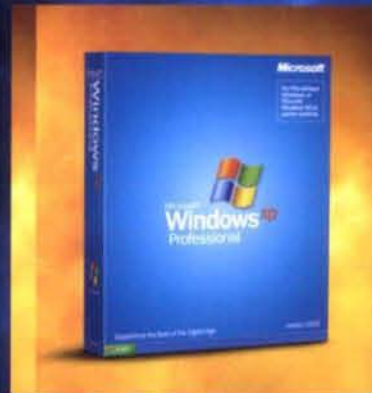
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Windows XP Professional not only runs more applications than Windows 95, Windows 98 or Windows NT® – but it's actually compatible with applications built specifically for these earlier versions.

■ Reverse system changes.

If you experience a system failure or other significant problem, Windows XP Professional is designed to help you easily restore your system back to its original working state.

■ Burn CDs with ease.

Built-in software support makes burning a CD as easy as copying to a floppy disk.²

■ Protect important business documents.

An advanced file encryption system provides improved protection from hackers and data theft.

■ Make it easier to receive IT help.

Using an Internet connection, you can share control of your PC with an IT expert, enabling the expert to help fix your software problems remotely.

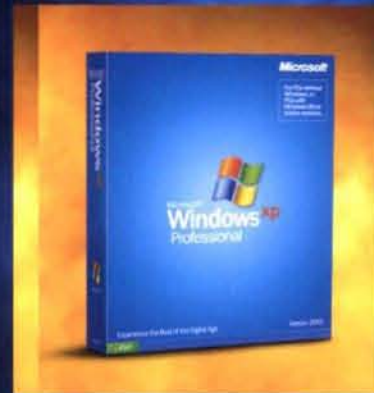
■ Control access to sensitive data.

Flexible access control enables you to select which folders are to be shared and who will have access to each folder.

1. Source: eTesting Labs, Microsoft Windows XP Reliability Study, October 2001.

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