



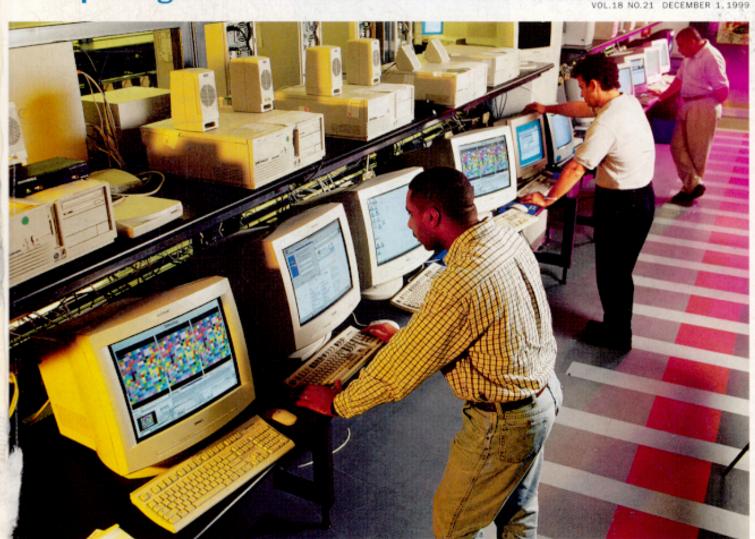
Amazing Graphics Breakthroughs That Will Revolutionize Computing New Benchmark Tests Find Fast Windows PCs Top New Macs For Web Access

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- AOL 5.0
- LapLink 2000
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Testing with New Internet And Graphics Benchmark Programs

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Cover photography by Thom O'Connor

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## **Bill Howard**

## **Standards Time**

You can put a shoe in the oven, but that doesn't make it a biscuit, folk singer Pete Seeger once noted. In the same vein, proclaiming your new technology to be an industry standard doesn't make it a standard. Here's my take on who's likely to emerge on top in a couple of standards battles brewing in wireless

networking and removable storage.

802.11 (Ethernet) HR vs. HomeRF wireless networking. Most of 1998's bit players in wireless networking have folded their tents, and we're down to 802.11 HR (802.11 stands for wireless Ethernet, and HR stands for high-rate or 11-Mbps) versus HomeRF. The HomeRF crowd cautiously says that 802.11 makes sense in the corporate office but claims HomeRF will be cheaper and therefore will win out in the home or small office for PC networking, as well as for things like game consoles and cordless phones. Trouble is, I see the early adopters of wireless home networking being the people using wireless Ethernet cards in the office notebooks they bring home; they already have half the cost covered and don't need the hassles of balancing two technologies. The verdict: Being cheaper won't be enough to carry the day for HomeRF.

CompactFlash vs. SmartMedia. These are the squarish, nonvolatile memory card formats used in digital cameras, MP3 music players, and the like. Compact-Flash (CF) is the thicker one, with more capacity; SmartMedia is credit card-thick and slightly flexible. Although they started out neck and neck, I'm seeing more hardware using CF. CF is currently up to 96MB capacity (\$230 street), with 128MB on the horizon, while SmartMedia is at 32MB (\$100). The verdict: CompactFlash. Losing more than half your storage capacity is a stiff price to pay for Smart-Media's slightly thinner form factor.

Sony Memory Stick. The Memory Stick is nonvolatile memory that looks like a gray stick of Dentyne gum and competes with CompactFlash and SmartMedia. It has roughly the same capacity as SmartMedia; 32MB (\$100 street) is the largest commercially available Memory Stick. It's used so far only by Sony, in digital cameras, in video cameras for grabbing stills, and in Sony's new digital-music memory stick Walkman (\$430 list). Only recently has Sony announced that others will license the Memory Stick. The Memory Stick's strength is also its weakness: It can incorporate rights-management controls that artists and recording companies will love, but if these

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are too one-sided, users will rebel. The Memory Stick also feels more like a product for individual consumers, and that's bad, because a lot of technology gets popular by being bought for business and brought home for weekend duty. **The verdict** Sony comes up with more brilliant ideas than just about any other company, but so far, the Memory Stick has the scent of Betamax.

IBM MicroDrive. This is a tiny hard disk about the size of a squared-off poker chip. It's not cheap, at \$500, but capacity is excellent: 380MB now and headed for 680MB next year. The MicroDrive could help build a market in tiny appliances that need onboard storage. The verdict: Looks like a winner, at least for specialized uses, with no real competitors.

lomega Clik! The Iomega Clik! is a 40MB, 2- by 2inch disk that showed up earlier this year after being noisily introduced in fall 1997. The Click! Drive was intended to be removable storage built inside, say, digital cameras, but Iomega now cites it as a cheap way to back up data from your notebook or to offload images from your expensive CF or SmartMedia cards using Clik! Drives or adapters that cost \$200 to \$300. Trouble is, there are now plenty of CF and SmartMedia readers that connect directly to your PC or notebook (Lexar gives one away with its memory). So Clik! would make sense only for, say, people who take lots of digital pictures on extended trips but don't bring along laptops for off-loading them. The verdict: Technically intriguing, Clik! may be the answer to a question not enough people are asking.

Floppy disk replacements. The Iomega Zip Drive, Imation SuperDisk, and Sony HiFD all want to replace or supplant the much-maligned 1.44MB floppy disk. The Zip Drive has decent capacity with its 250MB version (or the 100MB original), but it can't, of course, read floppy disks The SuperDisk (a.k.a. LS-120) can, but it's still 120MB. So can the HiFD, at 200MB, but Sony has been slow to deliver in volume. The verdict: No knockout winner. Each has adherents, each will survive at least near-term, and all should watch out for CD-RW and then DVD-RAM.



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