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MACHINE CHIC

THE POMA *WEARABLE* COMPUTER IS FLASHY BUT NOT VERY FUNCTIONAL

It isn't easy to stand out in a place like New York City, where outrageously dressed people are as common as pigeons. Even if you wear a nose ring and dye your hair purple, most of the locals won't give you a second glance. But I recently devised a plan to rise above my anonymous status and become the most sensational person in Manhattan, attracting stares of wonder and bewilderment every time I walked down the street. The secret to my new celebrity would be a device called the Poma, a computer that looks like a futuristic fashion accessory.

Unlike the now pedestrian PDA (for personal digital assistant)--the Palm, the Visor and so on--the Poma is a portable device meant to be worn, not held. A shiny silver band clamped to the forehead suspends an inch-wide computer screen in front of one of the user's eyes, like a high-tech monocle. A black wire connects the screen to the computer itself, an 11-ounce, six-inch-high unit that can be carried in a coat pocket or clipped to a belt.

Another wire links the computer to an optical mouse that fits in the user's hand; just rub your thumb across the beam of light, and the cursor moves across the screen. In theory, at least, you could write stories, play games, watch videos or surf the Internet while casually strolling through the park. You'd see the real world with one eye and the virtual world with the other.

The concept of a ***wearable*** computer is not exactly new. Researchers at the Massachusetts Institute of Technology, Carnegie Mellon and other universities have been developing prototypes of such devices for years [see "***Wearable*** Intelligence," by Alex P. Pentland; ***SCIENTIFIC AMERICAN*** PRESENTS: EXPLORING INTELLIGENCE; Winter 1998]. In the late 1990s Xybernaut, a company based in Fairfax, Va., developed a line of ***wearable*** computers called Mobile Assistant that was targeted at business users--for example, maintenance crews and utility workers who need easy access to information while working with their hands. The Poma is Xybernaut's first ***wearable*** device aimed at the consumer market. As soon as I saw the pictures on the company's Web site--showing a beautiful young woman and a clean-cut executive posing with the computer--I knew I had to try it.

Strapping on the Poma for the first time is definitely fun. Feeling like a cyborg getting dressed for work, I tightened the silver band around my head and spent a few minutes adjusting the tiny computer screen until it was properly positioned in front of my right eye. (If you happen to favor your left eye, you can place the screen there.) The device contains a mirror that reflects a liquid-crystal display into the user's line of sight; because the image is projected so close to the eye, the inch-wide screen appears to be the same size as an ordinary desktop screen viewed from about two feet away. The Poma's operating system is Windows CE, the modified

version of Windows used in many PDAs, so the screen icons and menus look comfortingly familiar. The system allows you to write text by clicking the mouse on the letters of a "software keyboard" that pops up on the screen.

My disappointment began when I tried to do something useful with the device. I was able to create text files using Microsoft Pocket Word, but I found that writing with the software keyboard is maddeningly laborious. I couldn't deftly maneuver the mouse with my thumb, and I had to put the letters in a gigantic font to make them legible. Even so, I still had hopes for the Poma; although I couldn't use it to write a novel while walking to work, perhaps I could dash off brief email messages or check out my favorite Web sites. The Poma can access the Internet wirelessly via the popular Wi-Fi standard (also known as 802.11b). If you slip a wireless LAN card into the device, you can connect with the Wi-Fi networks now available in many airports, hotels and coffee shops. But this feature is of dubious value, because in most of these places you're more likely to be sitting with the device than walking. And if you're sitting, it would be a lot easier to surf the Internet with a PDA or a l aptop than with the Poma.

I was amazed to see that the Poma contained no games--not even solitaire, which would be a nice distraction for a bored commuter wearing the device. The people at Xybernaut said I could download games to the Poma using a serial input/output card hooked up to a desktop PC. But this was easier said than done. When I tried to connect the Poma to a PC, I was stymied by a series of error messages. After several hours of effort and numerous calls to the technical folks at Xybernaut, I ran out of patience. This failure also made it impossible for me to evaluate the Poma's presentation of video and audio clips, because I couldn't download any multimedia files.

Nevertheless, I was determined to walk through the streets of Manhattan with my Poma, even if I couldn't do much more than tap out a few words on the screen. When the device is turned on, the computer worn on the belt and the handheld mouse emit a neon-blue light, which nicely complements the wearer's otherworldly appearance. For one brief, glorious moment, I would be the strangest-looking person in New York!

But even this goal was frustrated. As I walked down Madison Avenue, trying very hard to keep a straight face, many of the passersby did double takes and gaped at me. But many others didn't even notice the thing, and quite a few jaded individuals took one look and turned away, unimpressed. What's more, this street test revealed that the Poma has several practical limitations. As every New Yorker knows, weaving through the crowds on the sidewalk requires alacrity as well as agility. Although the Poma didn't completely block the view from my right eye--the computer screen is semitransparent, allowing a dim vista of the outside world to filter through--I quickly discovered that I risked serious injury if I focused too much attention on the screen. Only at the street corners, while waiting for the light to change, was I able to input a few pithy observations, such as "now crossing the street."

I also learned that the Poma works best on overcast days. Whenever the sun broke through the clouds, the images on the computer screen paled and the text became unreadable. I felt as if I were waking from a dream as my virtual world thinned into nothingness. For the rest of the walk, I tried to stay in the shadows. But after I'd traveled about 10 blocks, I noticed a more intractable problem. A sharp pain was spreading across my forehead. My ocular muscles were feeling the strain of keeping my right eye focused on the screen. The pain became so intense that I finally had to rip the Poma off my head. For the next half a minute, I lurched dizzily down the sidewalk as my eyes came back into alignment.

Perhaps I was wearing the device incorrectly. Or perhaps the trouble was my nearsighted, astigmatic vision. In any event, I lost enthusiasm for the Poma--it had literally nauseated me. I was also put off by its eye-popping price tag of $1,499. When I asked Xybernaut how many Pomas had been sold so far, I expected a modest number, maybe several hundred. But the answer was depressingly low: just over 20.

Still, I haven't given up on ***wearable*** computers. Voice-recognition software may be the key to improving the devices; it would be a lot easier to compose letters and sonnets on the fly if one could dictate to the machine. Until manufacturers work out the kinks, however, I'm not going to make any more high-tech additions to my wardrobe.

PHOTO (COLOR): FIRST ***WEARABLE*** COMPUTER for the masses, the Poma packs a lot of power into a

small package. The six-inch-high computer (center) contains a 128-megahertz RISC processor, 32 megabytes of random. access memory and an equal amount of read-only memory. The headmounted screen (top) weighs less than three ounces. The optical mouse (lowerleft) allows you to move the cursor with your thumb.

PHOTO (COLOR): TOO WEIRD to wear? The author discovered that the Poma didn't faze most New Yorkers.

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By Mark Alpert

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Top of Page

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2 of 4 Result List | Refine Search Print E-mail Save
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