**Devices**

**CREATING HD VIDEO ON STANDARD TVs**

Sony has unveiled a digital image processing chip for use in televisions, which will let viewers manipulate the images broadcast to their screens. The Digital Reality Creation Multifunction v2 processor lets viewers digitally enhance the input signal to produce output in full HDTV quality. The input can be a standard TV signal or one of the various high-definition digital formats. In addition, the DRC-MFv2 can enhance HDTV input signals. The processor can digitally create up to 36 pixels for each pixel in the input signal, letting viewers enlarge a portion of the video image by up to three times in each dimension while retaining a high-quality image. Viewers can also pan, tilt, and select images from their viewpoint. Sony will initially offer the DRC-MFv2 in TVs only in Japan.

**MOBILE PHONE WITH A HARD DRIVE**

Samsung has unveiled a revolutionary mobile phone that contains an internal 1-in., 1.5-Gbyte hard drive (see Figure 1). The SPH-V5400 also includes a built-in, 1-megapixel camera, a 240 × 320 quarter VGA, 2.2-in. thin-film transistor (TFT) LCD, and a second organic LED 128 × 128 display. It also has an MP3 player, dual speakers, and an FM radio transmitter, allowing it to play music on a nearby radio. The phone can also record digital video and accompanying audio, and it provides video-out so that you can play back video on an external display. Additionally, the SPH-V5400 includes software that will display electronic books on the screen and Korean-English and English-Korean dictionaries. Finally, by connecting the phone to a computer via a USB cable, you can use it as a portable storage device. The SPH-V5400 has been available since mid-September for about US$800, but only in Korea.

**A PC FOR THE MASSES**

Carnegie Mellon University professor Raj Reddy is working with researchers at the Indian Institute of Science, the Indian Institute of Information Technology, and the University of California, Berkeley to develop a low-cost, wireless PC designed for users in developing countries, particularly those with large illiterate populations. Microsoft and TriGem (Korea’s third largest PC maker) are supporting the project.

A simple television remote control controls the PCtv, which can function as a TV, DVD player, telephone, and videophone. Because it’s targeted at those who can’t read, the product will...
require a larger amount of wireless bandwidth than a traditional PC. The target price is US$250 by 2007.

**HP Launches Integrated Wireless iPAQ Handheld**

Hewlett-Packard’s new Pocket PC handheld, the iPAQ h6315, includes GSM/GPRS (General Packet Radio Service), 802.11b, and Bluetooth radios, making it one of the first handhelds to provide multiple high-data-rate wireless options. The h6315 (see Figure 2) can operate on four bands (850, 900, 1800, and 1900 MHz), making it usable in almost every country. The h6315 is based on a 200-MHz Texas Instruments Open Multimedia Applications Platform 1510 processor and makes available to the user 55 Mbytes of RAM and 20 Mbytes of ROM. The h6315 also offers a 640 × 480 VGA camera, a 240 × 320 quarter VGA transflective, TFT color display, an IrDA transceiver, and a Secure Digital slot. It weighs 6.7 oz. and measures 5.4 in. × 2.9 in. × .8 in. It ships with Microsoft Windows Mobile 2003, HP’s iPAQ (persistent) file store, image capture and image zone products, and other software. In the US, T-Mobile provides service for the handheld.

**ON-DEMAND PROTOTYPING**

eMachineShop (www.emachineshop.com) has developed a free program that you can use to design 3D objects in metal or plastic; you can then price and order your designs online. Unlike many traditional CAD programs, eMachineShop’s software is easy enough to use that non-experts can design 3D objects. The software analyzes the designed object’s shape, material, and finish to advise the user of manufacturing limitations, then provides step-by-step guidance through the design process to avoid design pitfalls, and finally offers a 3D preview of the object (see Figure 3). People have used the service to make such items as name plates, camera bases, battery holders, robot parts, and parts for a home-built airplane. When you order your design, eMachineShop sends the order to one of the machine shops under contract with the company for manufacturing and shipping. 

**Figure 2.** HP’s iPAQ h6315 provides multiple high-data-rate wireless options.

**Figure 3.** eMachineShop offers 3D previews of client-designed objects.