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# Cheap shot

An SOC makes a one-time-use video camera feasible. Will consumers embrace the minimalist feature set?

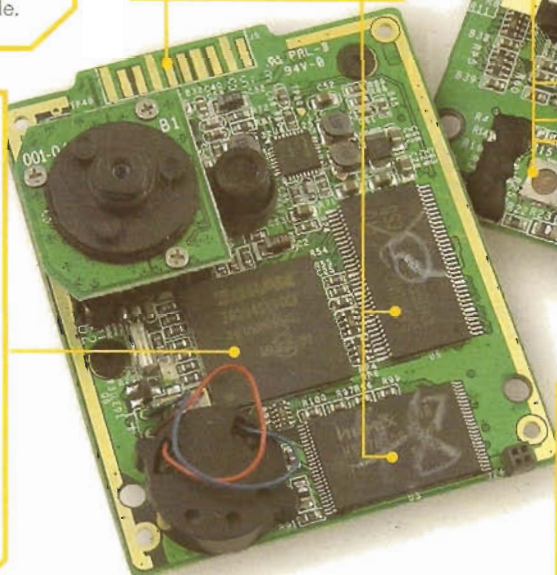
Starting about a month ago, drugstore chain CVS began selling a digital-video camera for the paltry sum of \$30. The product of digital-imaging specialists Pure Digital Technologies, the bare-bones device probably will serve most often in emergency roles—such as when dad forgets to charge the battery for the family camcorder. On the other hand, the camera is so simple to use that it could develop a fan base. The buyer shoots the 20 minutes of footage the camera can store, takes it to a CVS, pays an additional \$13, and minutes later receives a DVD. But how can CVS sell the camera at such a cheap price? Our Prying Eyes staff didn't have to skip many lunches to buy one and find out.

The bulk of the circuitry, including the digital chips, an image sensor, and a microphone, resides on the side of a 2.5x2-in. pc board that faces the subject (left). The side facing the videographer hosts a 1.4-in. LCD. A speaker mounts on the subject side, flush with a round hole in the board; an acoustic foam cover is visible on the LCD side.

The camera has no removable memory, but the board includes a Samsung 256-Mbit DDR SDRAM and a 1-Mbit NAND flash from Hynix or Samsung. A nonstandard connector, hidden under a sticker on the top edge, provides the USB access CVS uses to retrieve the video.

The camera features a grand total of four user buttons: power, playback, record, and delete. The COACH's impressive autoconfiguration capabilities allow the camera to adapt to light levels, but for \$30, don't expect focus and zoom.

Zoran's ZR36451 SOC, a member of the company's COACH (camera on a chip) 7 family, implements the digital portion of the design, except memory and the display. The SOC includes a 32-bit MIPS core, a display controller, a 480-Mbps USB interface, memory interfaces, and video-processing support. The chip, which includes DSP capabilities, handles 640x480-pixel (VGA) encoding at 30 fps using Zoran's TruDV compression technology.



The camera packaging states, "High voltage inside. Do not disassemble camera." Judging by the activity on various Web sites, the warning has not dissuaded many hackers.