

# Going Tapeless

By Tony Thomas

Fast-forward. The year is 2004. You casually stroll into the local chip store to pick up the new Rolling Stones release: "Geritol in my Soul". The sales clerk punches it up in the computer and inserts the memory chip into the slot.

In seconds, the album is written from the computer's optical disk to the chip. You pull out your Futura card and, in an instant, your account is billed, the store gets its cut, and Mick and the boys and the chip company get the rest. You pop the chip into the Dynasound 9000 chip player in your shiny new Ford Mustang 2000 and head off into the sunset. Rewind. Back to 1994.

Does that scenario sound far fetched? Well, with the advances made in the area of digital storage in the past decade, it is entirely feasible that we will see the end of magnetic tape as an analog and digital storage medium within the next decade.

## **The Drawbacks of Tape:**

Magnetic tape is a storage medium which has been in use for over half a century. It was invented and refined by the Germans during World War II. After the war, captured German tape machines served as prototypes for the Ampex machines which followed. While tape is an acceptable recording

medium, it lacks stability. If it is wound too tightly, a phenomenon called "print through" occurs which allows sound to be copied to adjacent layers causing "pre-echoes". It stretches easily, it is prone to creasing and breaking and the oxide literally flakes off with age. In fact, many precious tapes are lost each year in tape vaults due to neglect. I heard that when the "Woodstock" soundtrack was remastered a few years ago, the tapes were in such terrible shape that you could actually see through sections where the oxide fell off. Fleetwood Mac allegedly had to redo tracks on some of their albums because the tapes wore out during the tracking process. In any event, the useful life recording tape is only about ten to twenty years.

**The Optical Advantage:** Optical media like the compact disc and videodisc are much more durable than tape. It is estimated that compact discs will survive for up to a century before deteriorating. Since the disc doesn't make contact with any moving part, it can be played over and over without sonic degradation. Until recently, units capable of recording compact discs were prohibitively expensive. They dropped from \$30,000 to \$4,000 in just a few years. It is predicted that they will fall to less than \$2,000 within the next year. The MiniDisc,

which uses optical disc technology (but which is incompatible with the CD) is already available and recorders have fallen well below \$1,000. So I believe that recordable CDs will be the next storage medium of choice.

**Chips...The Final Frontier:** As larger memory chips become available (especially "flash" RAM which requires no power to maintain data) and less expensive, I believe that they represent the future storage medium of choice. Just last week, I replaced my answering machine with a new model with 10 minutes of digital storage capability. It is completely tapeless and has no moving parts. I also heard that at least one company will release a digital tapeless voice recorder in the coming months which uses the same technology. I believe these two devices are precursors of tapeless recording devices to come.

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