CD Writers for Archival Image Storage

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CDs HAVE BEEN the buzz word of the '90s. All the music systems have gone to them, and even those special moments are now captured and recorded for all time on CDs. Computer software manufacturers were quick to realize the potential, so most now offer everything from A to Z on CD.

But you operate a photo lab and are thinking of expanding your present electronic imaging services. You probably have a CD player and have no doubt heard of CD writers, yet say, "That's nice, but I'm not ready for a CD writer yet." Waiting may be a mistake. The CD writer may be an excellent solution to your ever-increasing problem of image storage.

The first hurdle to understanding what the CD writer can do for you is comprehending exactly what the writer "writes." Most people are under the impression that they are only for making Photo CDs. In truth, the CD writer can write all kinds of data including music, multimedia, scanned photos, program backup, and archival storage of all types of image formats.

This last item is important to the expanding electronic lab, because the CD can hold over 600 megabytes of data. The CD also has a life span of 50 years or more and a relatively low price for blanks that occupy a small storage space. So, you can see how the CD writer just might be your lab's answer.

In order to fully understand how the CD writer works, we tested two of the more popular units and their operating software: the Kodak PCD Writer 200 with its TOPiX Publishing Software and the Pinnacle Micro RCD 202 with RCD Recording Software. Our intention was not to compare the units, but to analyze how these systems work and pass that information on to you.

Writing data to a CD is quite different than copying on other storage devices. With tape backups, optical media, and magnetic devices, the data is merely copied from one source to another with some type of file manager, while data formats for the CD need to be translated before being written to the CD using two basic methods.

1. "On the Fly." Using the operating software, select the files to be written to the CD. When you start writing, the computer translates the data as it writes it to the CD. Sounds simple enough, but the CD writer writes at a single continuous speed, and must have a constant stream of data at 300K per second or the disk will crash. This means that the hard disk delivering the data must be organized and very fast in order to send the data error free.

2. The second method for transferring data takes longer to do, but is usually safer and more reliable than "On the Fly." Transfer of the data is done with an intermediate step where the operating software organizes the data and writes one large file in the CD format on the hard disk. This file is then copied to the CD and can be deleted from the hard disk once you are sure that it transferred properly.

When CD writers first came into the computer world, they were "Single Session." This meant that all 600 megabytes of data had to be written in one session or you could not utilize the entire CD's capacity. This also meant that you had to have a 600 megabyte hard disk to hold the translated file before it was copied to the CD. These CDs were readable with a "Single Session CD ROM reader."

The CD writers today use operating software that allows multiple sessions to be written on a single CD. When the first session is written, a directory goes with it so the CD reader can locate the files on the CD. When a second session is written, a

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new directory is added showing the locations of the new files plus the files written during the first session.

When the CD is read by a "Multi-Session" CD reader, it looks at the last recorded directory. With the "Multi-Session" method, you can transfer data more often, using a smaller companion hard disk. In our testing of the Kodak PCD and the Pinnacle RCD, we found that 6-8 sessions of 80-100 megabytes seemed to work the best.

Another method for recording data to a CD lends itself very well to use in the photo lab. With this method, each writing session is recorded in a separate track or volume on the CD. Only one track can be read at a time and is selected with the operating software.

You are also able to keep only your most recent files visible on the computer system, or you could store backup files on the same CD. We found this function desirable for separating clients and backup files. This recording method also has a built-in security system in that its data can only be read with the CD writer and software that were used to actually write the CD.

Installation and operation of both CD writers and their software proved to be simple and easy to do. Setting up the CD writer itself was a matter of attaching a power cord and a SCSI (Small Computer System Interface) cord. The Macintosh systems have the SCSI interface built into the system, while on the PC side, a required SCSI board usually comes with the writer. We used an Adaptec 1542 SCSI board for both the Kodak and

Pinnacle CD writers on our 486-66 PC system. Most of the CD writers available today work in both the Macintosh and PC environment. Once the unit is attached to the computer, and the SCSI address set to 1-6, it can communicate and keep track of the CD writer. Other devices such as scanners and hard disks may use other SCSI addresses, so it is important to set it to an unused address.

Both the TOPiX software for the Kodak PCD 200 writer and the Pinnacle RCD software for the Pinnacle RCD202 installed in a few minutes, and we were ready to write our first CD. A very important "Test" function in both programs can save you time, money, and bad disks.

Once you have decided if you are going to write using the On the Fly or the intermediate file method, press the "Test" button. The software then makes a practice writing session on the CD writer. It does not actually write on the CD. The software checks speed, transfer rate, and reliability of data. If the test passes, you can then write the data to the CD. Both of these software programs have batch processing programs that allow the computer to write several sessions at a time unattended.

Once we had set up a CD writer in our lab, we put it to work. Its first task was to back up every system in our business. Next, we transferred all our old client files from floppies, cartridge drives, and compressed files to CDs. On one CD alone, we transferred over 500 floppies and on another we moved 10 44-megabyte cartridges of data. With the transfer of data to those two CDs, we freed up $1,500 worth of temporary storage space! With the price of CD writers in the $3,500 to $5,000 range, it would not take long to justify adding a CD writer to your staff.

Jack and Sue Drafahl own and operate a custom lab in Portland, OR. They are also professional photographers, specializing in underwater photography.

For more information about the CD writers and software used in this article, contact the following companies:

Kodak PCD Writer 200
800/235-6325

TOPiX Software for the Kodak PCD Writer 200
408/376-3511

Optical Media International
180 Knowles Drive
Los Gatos, CA 95030

Pinnacle RCD 202 writer and RCD software
714/727-3300

Pinnacle Micro, Inc.
19 Technology Way
Irvine, CA 92718