

THE '90s - THE DECADE OF DESKTOP MASTERING

A Look at Desktop CD-ROM Recorders for Macintosh

by

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The '80s became known as the decade of desktop publishing. Now desktop CD-ROM recorders could well make the '90s the decade of desktop mastering. During the last eighteen months, the prices of these once-exotic peripherals has dropped dramatically. At the same time, Apple Computer, Inc. is mounting a bold effort to dramatically expand the installed base of CD-ROM players and are well on their way to bringing 1.5 million CD-ROM players to market in 1993.

As a result, storing and distributing digital information on CD-ROM is becoming increasingly popular and cost-effective. If a business or institution finds the need to create more than a dozen CD write-once discs in a year, a desktop CD-ROM writer should be seriously considered.

What is a CD-ROM Recorder?

A CD-ROM recorder (CD-R) is a peripheral that connects to the SCSI chain of your Macintosh computer, just like a printer or scanner. The writer uses laser optics to transfer digital information onto a piece of blank media by pitting the disc, just like the audio CDs found in music stores around the country. While the hardware is cross-platform, software determines what kind of computer must be used to master a CD and the features and formats that are available. But rest assured that there is software available to meet every need and level of experience.

What to Look For in a Recorder.

- Performance is the number-one quality to look for in a recorder. Since each piece of blank media is a \$20-\$30 investment, you want it to work properly every time.
- Match the features of the recorder to the task at hand. If you are creating commercial titles, it is unlikely that you will be writing a one-off in multiple sessions and at the moment, an international multisession standard has not been finalized, thus, software packages that can write more than once to the same disc use proprietary multisession formats, limiting their broader use with other CD players/recorders. However, this might not be a concern if you, for example, are using multisession only for archiving data in small increments.

- If you are mastering CDs on a daily basis, the mastering speed is an important factor. If you master once a month then you can usually select a drive with a slower mastering speed and not be disappointed.
- Choose a recorder that will work with the computer you own. A recorder with single and double-speed capability will allow you to master from virtually any Macintosh and use any speed media (such as a Syquest cartridge or another CD-ROM) as the data source. Some recorders have only double-speed capability and require a Macintosh Quadra and fast hard drive to master successfully.
- If you are in the business of creating one-off CDs for a living, you will want to choose a recorder that can be chained to additional recorders as your business grows.
- Finally, be sure that the recorder you select has software to support the formats you require.

Recorders Compared

At the present time major hardware manufacturers include Sony Corporation with a second generation product—the CDW-900E; Philips, weighing in with the CDD-521; Kodak, who markets the Philips technology as the PCD Writer 200; JVC, whose Personal RomMaker is an attractive recorder with a built-in hard disk drive; and Pinnacle Micro, with their RCD-202, rounds out the list. Let's examine each more closely.

Sony CDW 900E

The Sony CDW 900E Write Once unit is a commercial-grade product that shows the benefits of a second generation machine. The 900E can record at single-speed and at double-speed which means that the time it takes to master the CD can be adjusted to fit the data source and the computer on your desk. It can successfully master using an 68020 Macintosh II. A Macintosh IIfx or above is required for double-speed mastering. Up to 16 900E recorders can be chained together if desired.

The 900E contains a 4 megabyte buffer which allows for smooth data transfer at high speeds on all sizes of blank media. When data is being transferred at 300kps, any hesitation from either the computer or the source drive could cause a break in the data flow and ruin the blank media, but Sony's recorder is able to write a 74 minute CD flawlessly thanks to the large buffer which is 15 times larger than any other recorder currently on the market and eclipses the 64k buffer found in the Pinnacle drive.

Setup is as easy as connecting a SCSI cable but the 900E requires a SCSI peripheral, such as the master hard drive or a CD player, to be inserted in the SCSI chain between the Macintosh and the recorder. A SCSI cable is supplied but a power cable is not since the cable will differ from one geography to another. The power supply is universal.

Macintosh software is available from Sony Electronic Publishing Company and includes Multimedia Formatter™ for Macintosh, and the Hybrid Multimedia Formatter™ for Macintosh which can create a multi-platform CD-ROM (HFS & ISO-9660). Both versions of Formatter are deceptively powerful and are literally one-button solutions that require virtually no training to create HFS, HFS-Mixed Mode, and Audio CDs (basic Multimedia version), or HFS, Hybrid, and ISO -660 CDs (Hybrid Multimedia version). It is ideal for an office environment and for archiving data. Also available is a version of Multimedia Formatter™ for PC which supports Audio, HFS, ISO 9660, CD-I, CD-ROM XA, and UNIX formats. However it requires a more knowledgeable operator than does the Macintosh version.

Other Macintosh software for the 900E is available from Optical Media International (QuickTOPiX™) which also has PC and UNIX versions, and Sonic Solutions (CD Prep™).

Philips CDD-521 / Kodak PCD Writer 200

Sony and Philips co-own the patents to CD technology but they have approached the design of a recorder from different directions. The Philips recorder is a double-speed, multisession capable device. As of this writing, however, multisession software is unavailable to take advantage of this feature.

The Philips unit requires a mastering source with a fast SCSI Bus (300kps). Furthermore, a Macintosh Quadra should be used for best results. The unit can be used as a CD-ROM player as well as a recorder. Using multiple recorders in a daisy chain is not an option.

The Philips and Kodak recorders have a 256k buffer and a required minimum data flow of 300kps. Consequently, care must be taken to avoid any break in transmission during the writing process since the buffer will take less than a second to empty. The recorder will master both 63 minute and 74 minute media as does the 900E.

The Philips recorder can encode the following formats using QuickTOPiX software from OMI: ISO 9660, HFS, High Sierra, CD-I, Mixed-mode, Audio, CD-ROM XA, and UNIX. Once the preferences have been selected, the software uses templates called "QuickPrinters" which utilize the drag and drop feature of Apple's System 7 to institute a mastering operation. A QuickPrinter contains all the formatting and processing options contained in the template

used to create it. The software allows the user to create a CD Image file which can be used to simulate and test the data before actually writing to blank media.

While a QuickPrinter can be used with little training, setting up the software requires a technically knowledgeable operator. The software also supports the Sony 900E.

An important side note: OMI has protected its software by requiring that a software lock be placed on the ADB port of the computer. Without this “dangle” the software will not operate so if you move your recorder to another computer, don’t leave your “dangle” behind.

JVC XR-W1001 Personal RomMaker

JVC Information Products Personal RomMaker is a tower CD-R with a built-in 700 megabyte hard disk drive. Unlike the 900E and Philips/Kodak recorders, it cannot master a disc from an external source. While the Macintosh version of the Personal Publisher software has the most control over file placement of any Macintosh recording software, most title developers in a Macintosh environment are used to the WYSIWYG method of organization and don’t require special placement tools to move items or organize folders on the Macintosh desktop.

The recorder is a single-speed machine with a 256k buffer and supports HFS, UNIX, and ISO 9660 formats. This is the only recorder and software package that lets you test the speed of a premastered CD on the standard AppleCD 300 or the older Apple CDSC players.

Pinnacle RCD-202

Pinnacle Micro offers a recorder/player which can fit inside a Macintosh Centris or Macintosh Quadra family computer. It is the least expensive recorder currently on the market and will create Audio, ISO-9660, and HFS CDs. While the software claims to be multisession, it can be read only by another Pinnacle drive until it has been “Finalized.” At that point it can be read by other players, but no more data can be added.

Pinnacle software includes a system-extension and requires an external hard drive where all the files are to be grouped. Once on the drive, files and folders can be created to organize the data. As opposed to the QuickTOPiX software package, these settings must be recreated for each new recording session.

The RCD-202 is a single-speed player with a 64k buffer. Purchasers must weigh the attractive price against the performance and playback options currently available on this generation of software.

The Pinnacle recorder points the way toward future versions of this technology by all manufacturers. Recorders will become smaller. Prices will continue to decline. The cost of blank media will also drop significantly. All in all, the future of desktop mastering looks bright and exciting!

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