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Lab Report Multimedia
CD-R technology making inroads

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COMPACT disk recordable (CD-R) technology has arrived. Many users, be they computer users or multimedia developers, are using the CD-R to store data or multimedia applications.

Today, CD-R drives and CD-R disks have become common computer peripherals that can be purchased from various vendors in the country. The CD-R has come a long way in the last few years. No longer are these devices exclusively for engineers and technicians. With training, it is possible to operate and record CD-Rs on a desktop computer.

CD-R bundles: CD-R drives can be bought individually or in a bundle. Most users prefer to buy CD-R drives that are bundled with the software.

This is because firstly, it saves a lot of time and secondly, it can be a headache to come up with the best combination of CD-R hardware and software.

Most bundles also include a few free CD-R disks to sweeten the bundle. CD-Rs used to be very costly. However, over the years, with the increased interest in multimedia development, the demand for wanting to record CDs has also risen.

This has led to the cost reduction of the CD-Rs. In fact, in the last three years, the cost of CD-R drives have fallen drastically. CD-R drives are available in two versions.

For those who prefer having all peripherals and devices under one personal computer (PC) casing, CD-R drives are available as an internal device.

External CD-R drives are also available for those who are on the move. However, external devices are a little more costly than their internal counterpart. CD-R drives are both writable and readable drives, which means that they can be used to record as well as read data in the CD-R disks.

This makes them convenient to read the CD-R once data has been recorded.

CD-R drives are usually advertised as 4X/12X, which means it writes data at 4X speed and reads data at 12X speed. OneX speed is 150 kilobytes (KB).

There are numerous CD-R drives including drives from Yamaha, Data Disc, Panasonic, Hewlett-Packard and many more.

With new drives such as the digital video disk read only memory (DVD- ROM) drives that are capable of reading CD-R disks, the installed base for this technology has widened. It is also possible to record music onto a CD with a push of the record button.

Recently, Philips, one of the pioneers of the CD technology, introduced a device, the CD Recorder or CDR870, that can be connected to a stereo system to record music onto a CD-R as well as play pre-recorded music CDs. This device will definitely be popular among audiophiles and music lovers.

Pre-mastering software: On the PC, to record data onto a CD-R, software is needed. The CD-R software is known as pre-mastering software.

The term "pre-mastering" means converting files into the CD-ROM filing standard, which is the ISO 9660 or the International Standard Organisation 9660.

The ISO 9660 is a filing standard used by CD-ROMs. This standard allows data stored in CD-ROM disks to be readable by any CD-ROM drive.

Once data is recorded onto a CD-R under the ISO 9660 standard, it essentially becomes a CD-ROM disk that can be read by the millions of CD- ROM drives and now DVD-ROM drives that are in use today.

CD-R technology is driven by the type of software or pre-mastering software it uses. It is software-driven rather than hardware-driven.

The premastering software allows users to design and arrange data on a disk. How data is to be read from a CD-R will also depend on what the pre- mastering software offers.

It is possible to record many different types of data onto a CD-R. You can record digital audio, video, data and many more onto a CD-R. Just as long as the data is in digital form, the CD-R is able to record them.

There are many different data standards in the CD family. The most popular computer storage standard is the CD-ROM standard, better known as Yellow Book. A variation to the Yellow Book standard is the CD-ROM XA or CD-ROM eXtended Architecture.

Other popular data formats are the Red Book standard which is used to store digital audio or CD-DA (digital audio) and the White Book standard which is the standard used for video CDs.

Users are able to record digital data in any of these standards

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just as long as the pre-mastering software allows for it. All pre-mastering software are capable of recording CD-DA and CD-ROM standards.

There are several pre-mastering software available. They can either be bought as a standalone software or are bundled with CD-R drives.

The most notable and popular CD-R premastering software is from Adaptec called Easy CD Creator. This software is bundled with most CD-R bundles on the Windows platform.

On the Macintosh operating system (OS), Adaptec Toast is also widely used.

CD-R is the first member of the CD family that is capable of recording data. It is sometimes referred to as the Orange Book Part II.

Another member of the CD family that can record data is the CD-Rewritable or CD-RW.

The writers have just completed their second book, The Multimedia Pavilion: Trends and Technologies, and can be contacted at Tel: 03-7325996, Fax: 03-7325996 or E-mail: kneo@ pc.jaring.my.

Caption: Philips CDR870: Can be connected to a stereo system to record music onto a CD R as well as play pre recorded music in CDs.; CD R drive: Has become a common computer peripheral.

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