



THE OFFICIAL CDRINFO.COM CLONECD GUIDE

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We would like to thanks Olli, Barubary and the boys over [CloneClinic](#) for their help

Current Version: 1.04

History Log

01/08/2000 – First v1.00 release

18/08/2000 - v1.01 release:

- Added "[CloneCD Update tab](#)" in CloneCD Settings
- Added "[Can I make a CD with FAKE TOC \(ex. 1.3GB\) With CloneCD?](#)" in Tips
- Updated "[Final Conclusion](#)"
- Added "[Perfect Copy 2000](#)" in CD Protections
- Added "[Sanyo CRD-BP3](#)" results

11/09/2000 – v1.02 release:

- Added "[CloneCD Skins](#)" info
- Added "[Will TAO be supported ever?](#)" in FAQ
- Added "[As I heard there are 2 RAW DAO modes. What are their main differences?](#)" in FAQ
- Added "[Why I cannot read 96bytes SubChannel data with Plextor UltraPlex40?](#)" in FAQ
- Added "[Why my HP8100 cannot work with CloneCD?](#)" in FAQ
- Added "RAW+SAO DAO" pic in [Write Tab](#)

13/09/2000 – v1.03 release:

- Added "[Why most other current CD Copy software will not make working backups of my CDs?](#)" in FAQ
- Added "[Since CDRWin/FireBurner supports RAW16 how come backups will not work?](#)" in FAQ
- Updated "[Final conclusion](#)"
- Added "[Ricoh MP7120A](#)" results
- Added "[Mitsumi 4804TE](#)" results

09/11/2000 – v1.04 release:

- Added "[Why the backups of new SecuROM protection work only with CD/DVD-ROMs?](#)" in FAQ
- Added "[How I can enable DAO-RAW for my Yamaha CRW2100E?](#)" in FAQ
- Updated all [various cd protection tests](#)
- Updated [compatible drives list](#)
- Added "[SafeDisc v2.0](#)" info in CD Protection
- Added info about new [SecuROM](#) in CD Protection
- Updated [Settings](#) page

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History



Oliver Kastl founded Elaborate Bytes in the year 1986. They are specialists for Amiga mass-storage products, system-, driver- and embedded systems programming. Commercial "software only" products were CacheCDFS and

the very successful IDE-fix. So, CloneCD is the first Elaborate Bytes' product that is not for the Amiga series of computers. You can download latest version of CloneCD [here](#) (all languages). Its price is \$49 for US customers.

Overall

CloneCD is powerful CD replicator software that will allow you to make PERFECT BACKUPS of most current protected CDs. This can be performed because it writes in Raw Mode, which allows it to have total control on the written data. So we are going to see what makes CloneCD so powerful towards all other usual CD-R software for now.

A lot of protections have been created in order to prevent professional piracy by mass replication. Nowadays, most famous protections essentially used are: SafeDisc (from C-dilla), SecuROM (from Sony), LaserLock, regarding PC world, and LibCrypt (from Sony) regarding Console world (essentially found on Playstation CD for now). This makes the job more difficult when trying to make a safety backup of such CD.

You must have in mind that you have the right to make a safety backup as long as you own the original and as lots of people may have noticed: CD can be easily be scratched because of different causes (kids playing, temperature...)... and consequently may not work correctly, so backup is the only way to make sure CD can be played forever :)

First we will see the way theses protections work and how to recognize each protection, then theses protections will be tested with CloneCD and finally you will find a FAQ where most of questions you are wondering will be there. If you already know how work these protections and how to see detect it on CD, you can go to part II which deals with tests :-)

CD Protections Overview

(Based in our [CD Protection Article](#))

SafeDisc



How it works: The SafeDisc is comprised of three key features: (1) an authenticating digital signature, (2) encryption that protects the content, and (3) anti-hacking software. When attempting to make an unauthorized copy with a CD-R or with professional mastering equipment, the digital signature is not transferred to the copy. When an unauthorized copy is played back, the absence of the signature will prevent decryption of the program and the copy will not play.

How to recognize it: This protection is very visible in 2 ways:
A) Every CD protected will always have at least a file called "00000001.tmp" and most of the time also these files: clocksp.exe, .icd file, CLCD16.DLL, CLCD32.DLL. File named "clocksp.exe" also have specific icon. B) This type of CD includes lots of unreadable error. It usually has about 10000 unreadable sectors (usually start at sector 800+ and end at 10000+, see test for details), which represents about 20 MB in fact.

SafeDisc v2.0

Macrovision at 18 of August 2000 posted the [press release](#) for SafeDisc v2.0.

What's New?

- o **API support** - the SAFEDISC toolkit includes an API that will allow publishers to extend the SAFEDISC security to encrypt various functions contained in their content.
- o **New architecture** - major re-architecture of the SAFEDISC code to disable automated hacking tools and to include additional encryption to delay hacking.
- o **Disc burning prevention** - introduction of additional digital signatures to improve resistance against copying.
- o **Fail-safe manufacturing** - assures that SAFEDISC masters will only be mastered on SAFEDISC-enabled production lines.

How it works:

The first game, which includes the new SafeDisc v2.0 protection, is Red Alert 2. People have reported that you can easily copy the CD BUT it will run at CD-ROMs, only at the CD-RW drive, which the backup created!! If you try to install it at CD-ROMs you will get an error during the setup process (error in .tmp file). People also have reported that in some cases even original CDs refused to install at many CDROM drives.

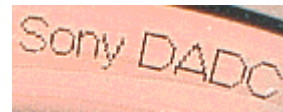
How to recognize it: The .icd file (the SafeDisc loader) is gone; the loader is now integrated in the exe files (in case of RA2 in the game.exe AND the setup.exe) and has nearly doubled in size. The game seems not to use SubChannel data. (Thanks SwENSke for his info)

SecuROM

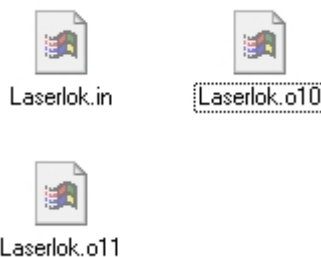
How it works: It is the combination of an electronic fingerprint applied to each disc and a sophisticated encryption technology for authentication differentiating a legitimate CD-ROM from a pirated disc. Unlike SafeDisc protection, the SecuROM protection does not rely on the deliberate introduction of unreadable errors onto the disc; consequently: any CD-Reader supporting RAW reading (and ability to read SubChannel) can do the job in a fast way.

How to recognize it: Most of the time, theses following files can be found on that type of CD: CMS16.DLL, CMS_95.DLL or CMS_NT.DLL; but you may find CD protected with SecuROM that don't contain theses files. So, another way to reckon it is to look at the barcode of CD, you will be able to distinguish a little "logo" with name "DADC" on it, (it only applies with Data CD since AudioCDs pressed by Sony also include this logo) (e.g. "Hachette 2000 Encyclopaedia" is a French SecuROM protected CD that only contains "DADC" logo).

Update: Recently Sony updated the SecuROM protection in order to make it much more difficult to duplicate. The game Vrrally 2 Expert-Edition uses that new protection. This time the protection checks for CDR media and when finds it crashes the application. CloneCD latest build can duplicate the new SecuROM but you need to install the backup only from CD-ROMs!



LaserLock



How it works: LaserLock uses a combination of encryption software and unique laser marking on the CD surface made during the special LaserLock glass mastering procedure, in order to make copying virtually impossible. Every CD-ROM application has a unique locking parameter that provides a complete protection against illegal re-mastering and reproduction.

How to recognize it: There is always a hidden directory called "LaserLock" at the root of the CD, this directory usually contains few files that are full of unreadable sector. Moreover, a little thin circle containing theses unreadable sectors can be seen on the CD.

PSX LibCrypt

LibCrypt sounds like a magical word for SONY? Or should I have said, "sounded" :) since this protection is also bypassed thanks to CloneCD. As CloneCD author said: ". This is a nice "side effect" since CloneCD is originally designed for backing up PC CD."

This protection has been introduced in October 98 with the release of the game MediEvil, the protection uses a Digital ID, which is stored in the SubChannel, and it consists in a 16Bit key. Like SafeDisc protection, LibCrypt have evolved in the time and there are currently 4 versions of LIBCRYPT called LC-1, LC-2, LC-3, LC-4: this one is in fact based on LC-3 scheme but includes extra routines and several ".exe" file, it makes the debugging work harder for the cracker, but for CloneCD: it is as easy as previous LibCrypt protections since this protection is always stored in the SubChannel Data and CloneCD copies everything it can find in the SubChannel Data :-)

How it works: As with any other type of protection, LibCrypt is composed of two separate routines: The first one performs a control check on the disk to discover if it is a copy, the second, based on the result of the first one, decrypts a block of data and crashes the PSX in the case of an incorrect result. Although based on the same code, the two routines have been altered a few times, to the point that in the last evolution (LC3) they have very little in common with the initial basic code.

How to recognize it: There's no official way, in fact you need to play the backup until you see the game crashes! There is in fact a little alternative way: A nice tool has been made by Icarus/Paradox (with initial idea from AVH) in order to find the right key (used as a parameter for subroutines) faster, you need to put the LC-F CD (LibCrypt finder) in your Playstation, insert the original protected CD or cloned CD in the Playstation, then the 16Bit key appears on the screen in few seconds: all non protected game will always display this value: \$1F0000045; therefore: every value different than the one mentioned will mean that the game is LibCrypt protected . Don't expect to find this tool over the net since it is only aimed to Paradox members, you can at least visit their [website](#) :-)

Another useful info: Infogrames (video games editor) is known to be the firm who has officially bought LibCrypt License from Sony, therefore, since End of June 99: 80% of games released by Infogrames have been protected (e.g V-Rally 2, Le Mans 24H, Eagle One Harrier Attack ...etc...Gekido)

CD-COPS

How it works: CD-Cops is a shell protection which is added to the CD's main executable. This is the only change necessary. Minute differences are measured to establish the CD-ROM's fingerprint and to ensure that copies are not accepted. This fingerprint is expressed as an 8-digit code or key number.

How to recognize it: The file CDCOPS.DLL can be found in the installation director and also Files with the .GZ_ and .W_X extensions.

Disc Guard

How it works: DiscGuard is an anti-piracy technology for optical media that works by putting a "signature" onto a glass master during mastering, using a specially enhanced mastering machine, or onto a CD-R via DG-Author, a forthcoming product (Q3 '99) consisting of a specially enhanced CD-R recorder with proprietary software.

How to recognize it: Theses files : IOSLINK.VXD and IOSLINK.SYS can be found on CD or Installation directory

CD Copy Detectors

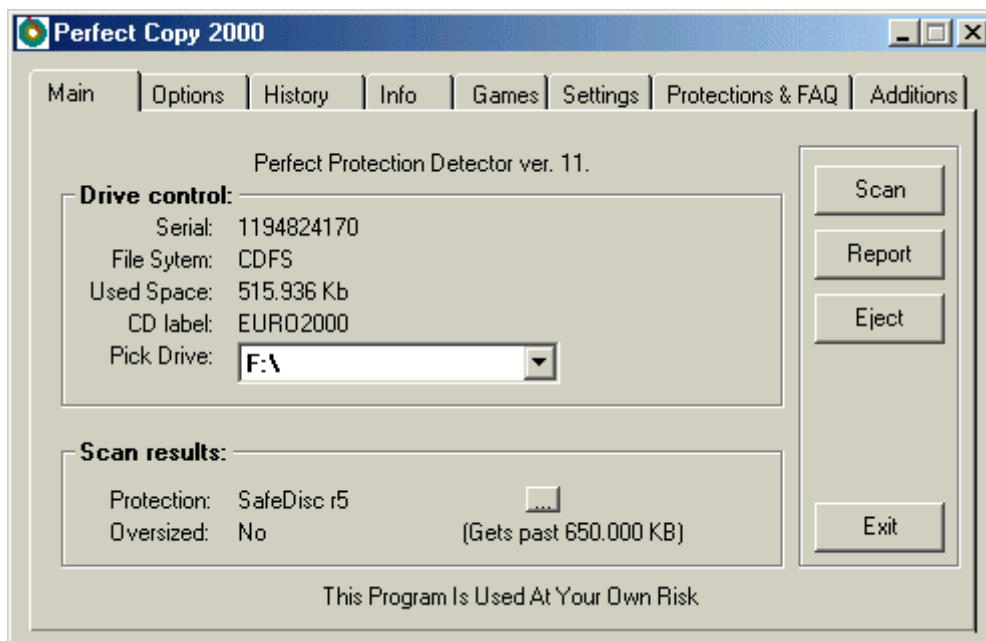
Copy Protection Detector

It is a utility that will detect most of copy protection (LaserLock, SafeDisc, SecuROM, CD-COPS, DiscGuard, Dummy files, Overburn). When a protection has been detected, you have the choice to pass the correct settings to CloneCD. As an example, we used a LaserLock protected CD:



Perfect Copy 2000

Perfect Copy 2000 is a useful add-on for CloneCD especially for novice users. It can scan and detect the possible copy protection of the CD and automatically pass the correct options to the CloneCD. As the author said, in the next versions Perfect Copy and Copy Protection Detector will become one product!



CloneCD Games Database

CloneCD Games Database is a program that lists PC & PSX games, the protection they might have and pass reading/writing option directly to CloneCD. Additional it offers: Build-in CD Protection detector, live database update and statistics from users feedback about the best reader for CloneCD! Quite useful for those want to make copies of their protected PC&PSX CDs. As you might understand it's a direct competitor of [Perfect Copy 2000](#). Competition is always good for getting the best result ;)

The screenshot shows the CloneCD Games Database application window. It has a menu bar at the top with options: database, statistics, protection detect, title report, options, and info. The main interface is divided into several sections:

- CD-DATA:** A list of games with columns for the game name and platform. The list includes: CD, Unreal Tournament (PC), Unreal Tournament (PC), Unter Schwarzer Flagge (PC), Urban Chaos (PC), and Urban Chaos (PC). The 'Unreal Tournament' entry is selected.
- HARDWARE:** Fields for Reader (Toshiba XM-6702B), Writer (Traxdata 2224+ [Rev. 1.06]), and CD (80 Min).
- SOFTWARE:** Fields for Protection (SafeDisc), Software version (1.0.2.4), and Version (Language) (EN).
- QUICK SEARCH:** A text input field and a FILTER dropdown menu set to 'none'.
- READ OPTIONS:** A list of checkboxes: ☒ read subchannel from data tracks, ☒ read subchannel data from audio tracks, ☒ fast error skip, ☐ don't report read errors, and ☒ intelligent bad sector scanner.
- WRITE OPTIONS:** A list of checkboxes: ☐ don't repair subchannel data.
- ADDITIONAL INFORMATIONS:** A text area containing the message: "Der Schutz befindet sich nur auf der ersten CD. CD#2 ist 74 Minuten" and "Only second CD is protected. Size of CD#2 is 74 min."

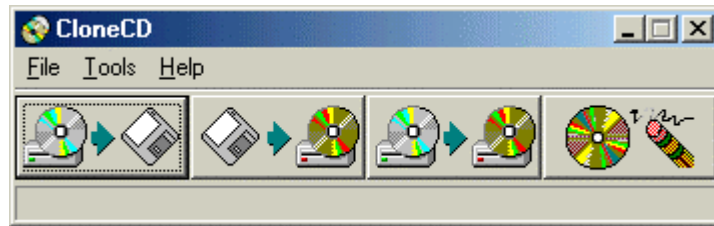
At the bottom left, there is a 'CloneCD' button.

Other programs worth looking:

- [CD Protection Scout \(German only\)](#)

Interface - Options

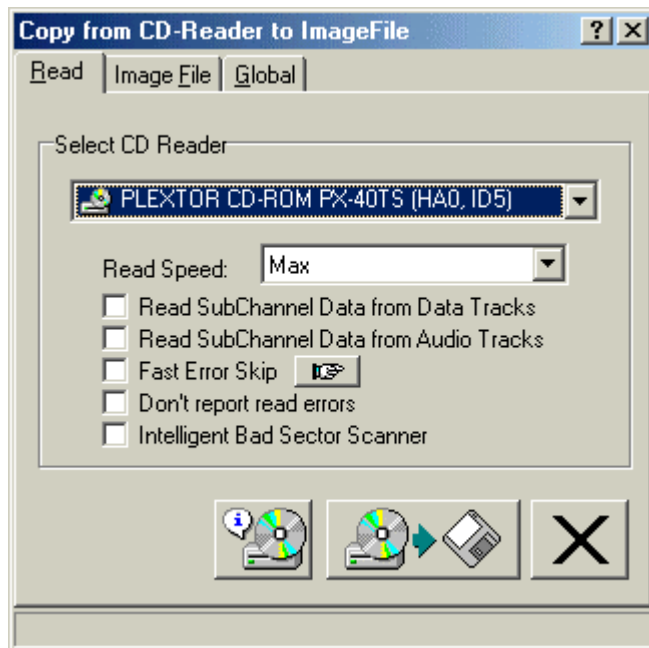
CloneCD interface remind us the one used in CDRWin. At the start up you will have four buttons to choose from:



- Read to Image File (Makes image of a CD)
- Write from Image File
- CopyCD (Read and then Write)
- EraseCD

If we press the third button (CopyCD) we will see the following tabs:

Read Tab



First one is "read to image file", this button is the main button since you will have to tick options in order to make a backup of protected CD:

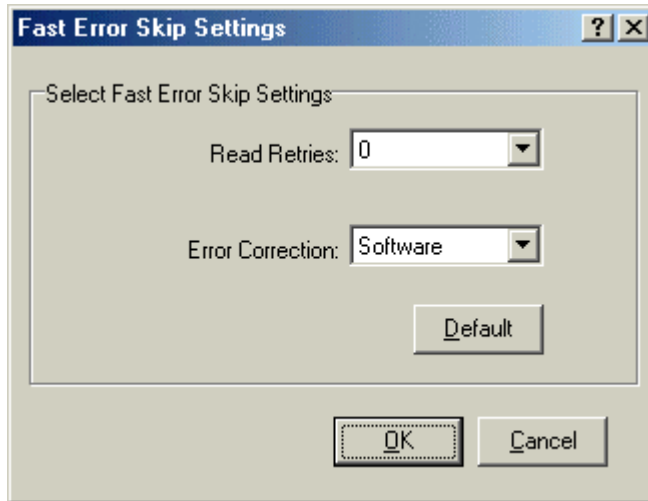
After selecting your CD reader and speed, you have choice to tick different features depending on the protection that is on the CD you want to back up. Let's see these options in details:

Read SubChannel Data From Data Tracks: You need to tick this box only for protection that uses a digital ID (which is stored in the SubChannel). At the moment, from the protection we have tested, only SecuROM (PC) protection and LibCrypt (PSX) protection use the SubChannel to store their digital IDs. It seems that CD protected with

"ProtectCD" use also this SubChannel.

Read SubChannel Data From Audio Tracks: Any positioning information is read from the CD, so you get the correct gaps between tracks, Indices, etc in your CD-Player's Display, if this option is checked. This box DOESN'T NEED to be ticked in the case of Playstation protected (LibCrypt) CD, anyway backup will also work if this box has been ticked. It seems that this option need to be ticked with "ProtectCD" CDs, unfortunately we were not having such a CD during tests.

Fast Error Skip: Very useful to ignore unreadable sectors, especially in the case of SafeDisc protected CD. This feature will disable "error correction" of CD reader during reading, it means that the number known as being the one for "read retry count" will be set to zero (or higher). Depending on the CD-Reader you own, reading can be done really in a fast way (e.g with Plextor 8/20 and Toshiba drives). This option combines the "Disable error correction" with a 2nd Layer error correction (Software, Hardware, none), which can be selected in CloneCD.



The fast error skip settings are intended to be set only once for every drive, and not on a "per disc" basis (that's why they are in a somewhat hidden sub-window). Best settings are usually the "default" settings:

- NONE - Never use it. Just there for completeness
- SOFTWARE - Always, except for Toshiba drives
- HARDWARE - Toshiba drives.

With the "retries" setting you can measure between speed and best reading results. The defaults are pretty good.

Don't report read errors: Read errors won't appear in the log window, this setting will make you gain several seconds (depending on the protection used).

Intelligent Bad Sector Scan: Ticking this box will allow CloneCD to perform an Intelligent Bad Sector Scan . From the tests we have performed, only LaserLock protected CD has been read quicker thanks to this feature (with CD reader that have difficulties to ignore read errors).

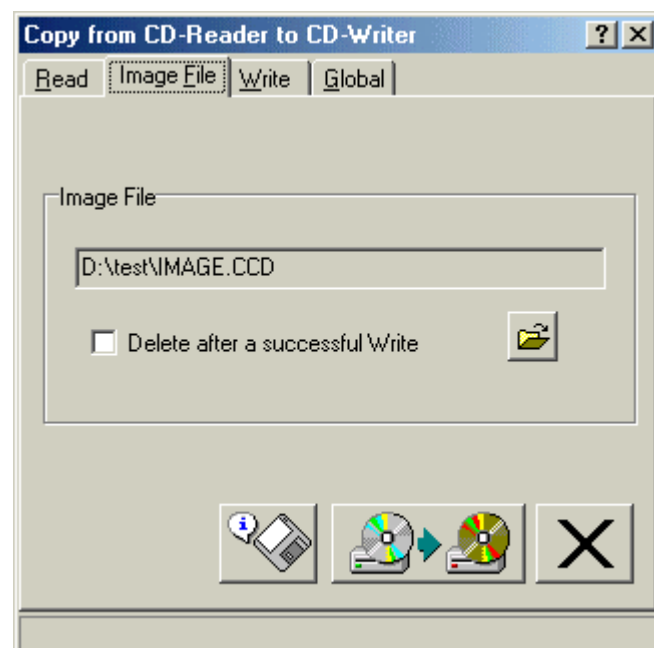


Image File Tab

In the "Image File" tab we can select where CloneCD will produce its image file and if it will be deleted after burn (or not). Actually CloneCD produces three files written (*.CCD, *.IMG and *.SUB). The three files placed in the same directory and have the same "front" name:

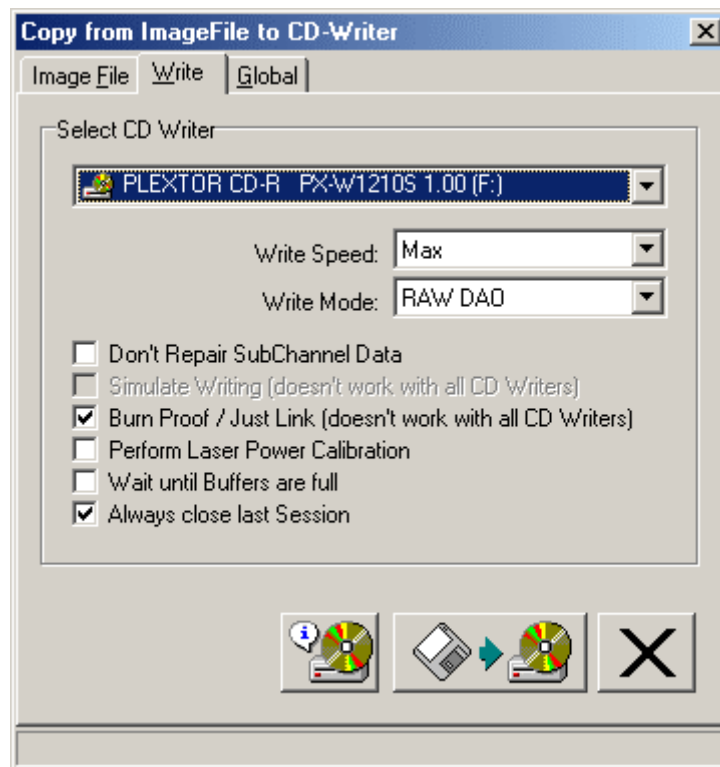
A) CloneCDImage.ccd. The CloneCD control file. It contains information about the logical structure of the CD. The CCD file is an ASCII text file. Experienced users may want to modify it in order to possible add copy protection in their CDs.

B) CloneCDImage.img file which contains the main channel data of all tracks of the CD and C) CloneCDImage.sub file which contains the sub channel data of all tracks of the CD.

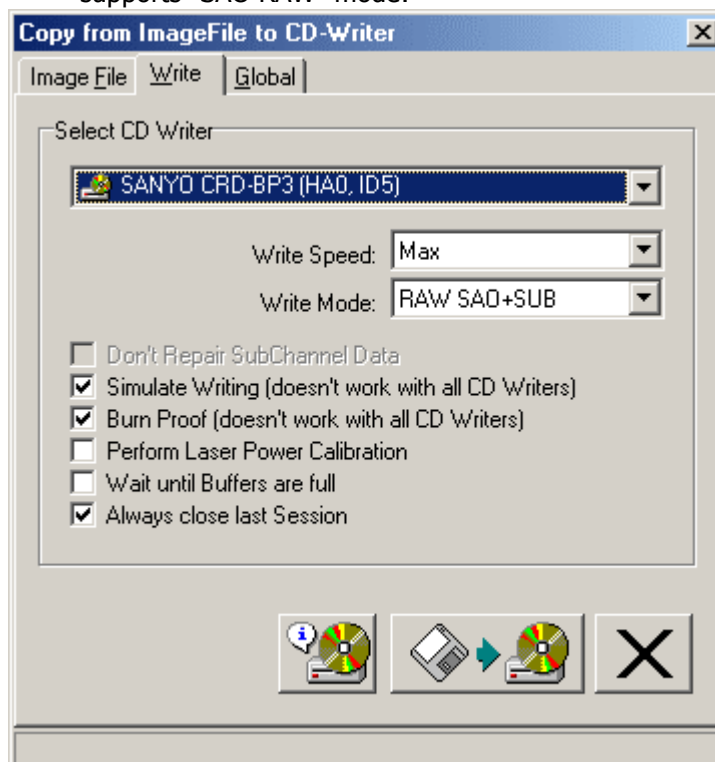
Write Tab

In the "Write" tab we can see the following options:

- **RAW DAO:** This is the default mode for CloneCD, which gives you total control over the burning process. If your CDR-W drive has this feature you will be able to backup most of current CD protections.



- **RAW SAO:** If your drive is not support "RAW DAO" then, your drive possible supports "SAO RAW" mode:

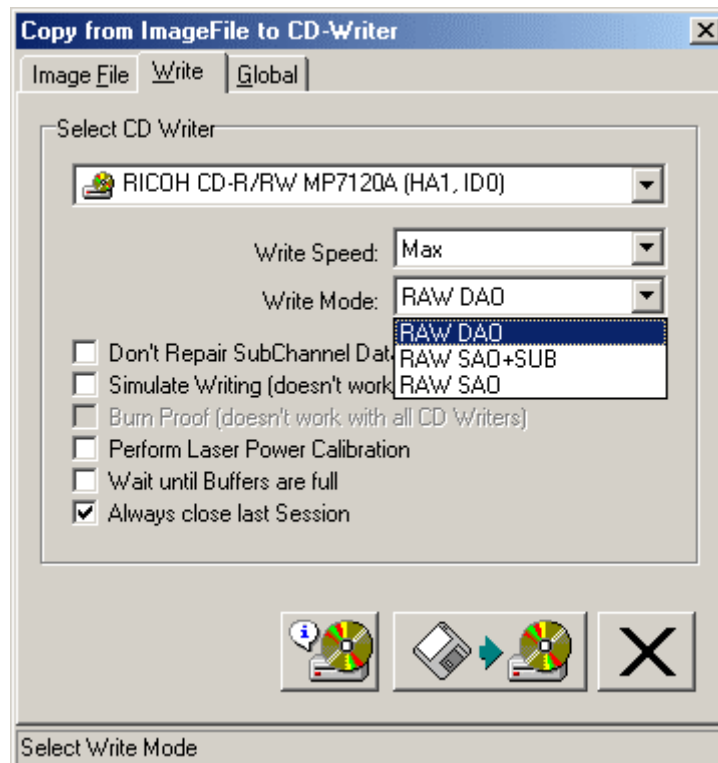


"RAW SAO": Data is written raw, but the writer will create all the SubChannel data. This is the "compatibility" mode. This can be used with CDs that contains bad sectors, and doesn't have special subcode layout.

"RAW SAO+SUB": Data is written raw, PQ sub codes are generated by the CD writer, and the R-W SubChannel data (CD+G) will be written too. You will

need this mode only when backuping up CD+G CDs.

There is however, another option that your drive supports both modes (RAW+SAO DAO). In that case CloneCD allows you to select from both modes (RAW/SAO) for writing. Of course in most cases RAW DAO should be your default choice. Most known drives that support that are Ricoh:



Write Options:

Don't repair SubChannel Data: This box need to be ticked only for Playstation CDs that are LibCrypt protected. You shall not tick it for anything else. If this option can't be activated, it means that you CD-Recorder don't support writing of 96 bytes SubChannel Data: this is a hardware limitation, not a software limitation.

Simulate writing: Enable simulation of writing if your CD-Recorder supports this option.

BURN-Proof/Just Link: Latest CloneCD builds supports all anti-coaster technologies (BURN-Proof & JustLink). This means that if your CDR-W drive supports it, you will not have buffer underrun problems. Also this feature could be used for coming "on the fly" CD copy mode!

Perform Laser Power Calibration: Usually you don't have to check this box since the CDR-W automatically adjusts the laser power. The Laser Power calibration helps to find bad CDR media without doing a real write, e.g. writing 12x with uncertified media. It *does* cause problems with some Philips writers, that's why it is off by default.

Wait until Buffers are full: If ticked CloneCD will wait until all buffers are file before the write operation is started. Usually you don't to check it because buffers are filled while the lead-in of the CD is written.

Always close last session: Normally that option should be ticked. However if you wish to backup *special* multi-session console CDs (aka Utopia DC boot disc) you need to Un-check it in order to get a working copy.

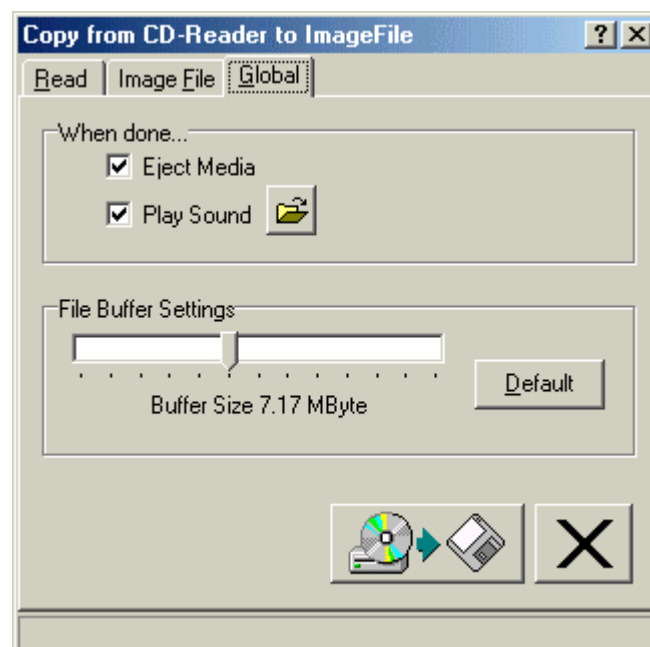
EraseCD Tab



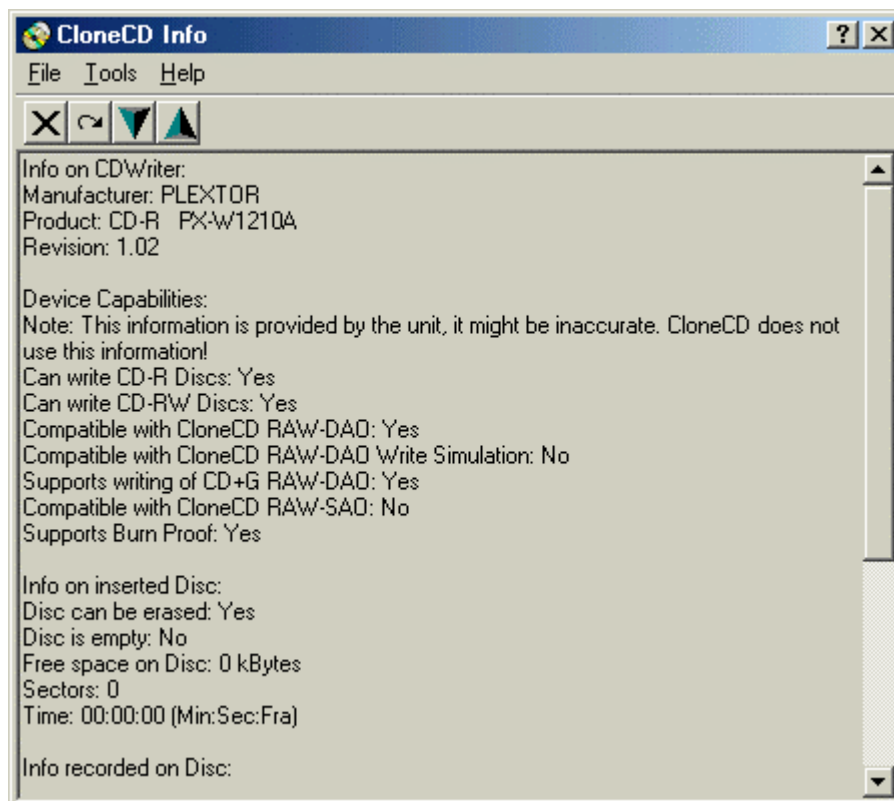
You can also erase RW CDs (full/fast) with CloneCD so there is no need for external software.

Global Tab

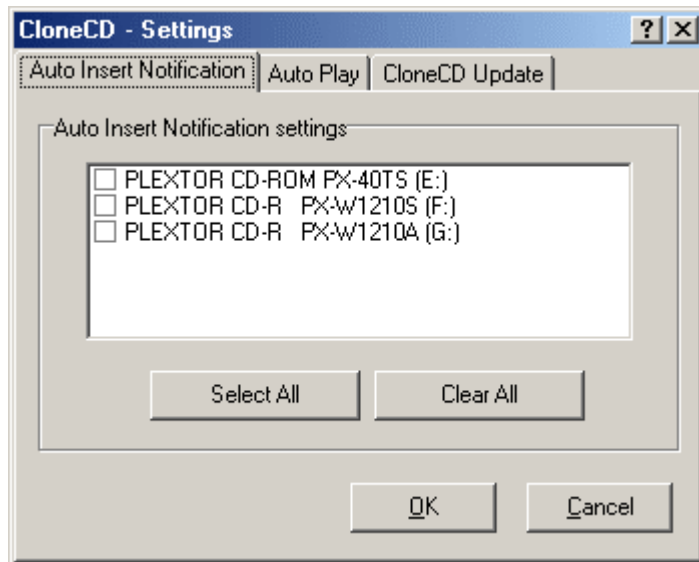
You can adjust the buffer, which CloneCD will use for writing the image. The best value here is the default one. If you still have problem you could possible increase it.



CloneCD has also a build in info tool, which reports back the capabilities of each CDR-W and CD-ROM drive:



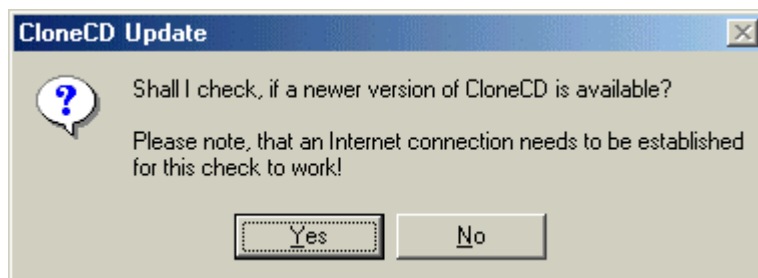
CloneCD Settings



Under Tools you can find the settings option, which leads to programs settings. What you can find there?

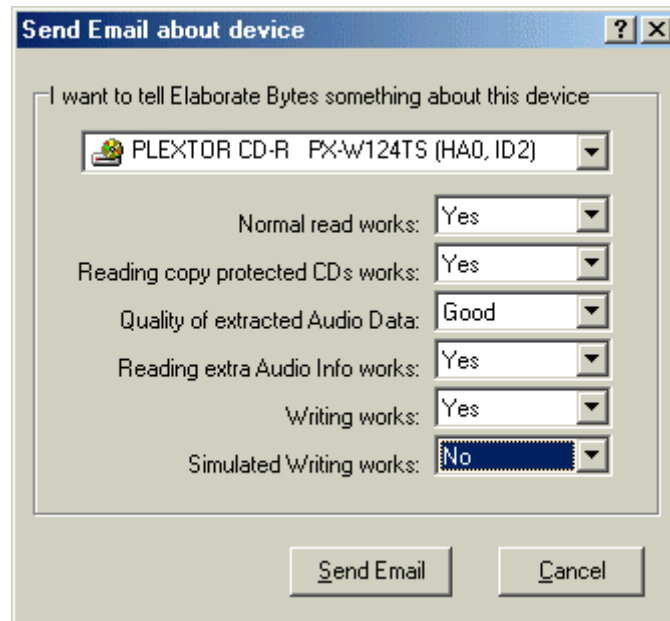
Auto Insert Notification: You can remove the Auto Insert Notification from drives.

Auto Play: You can select to play automatically Data or AudioCDs.



CloneCD Update: Enables automatic/manual check for new CloneCD versions (Requires Internet Explorer 4 or better). If you check it, CloneCD will automatically check once per week for newer builds and download them.

Email Author: Last another cool option that CloneCD has is that you can send an e-mail to author about how well CloneCD performs with the CD-ROMs or CD-Writers you might have.



The image shows a Windows-style dialog box titled "Send Email about device". It contains a text area with the message "I want to tell Elaborate Bytes something about this device". Below this is a dropdown menu showing "PLEXTOR CD-R PX-W124TS (HA0, ID2)". There are seven more dropdown menus for performance metrics: "Normal read works:" (Yes), "Reading copy protected CDs works:" (Yes), "Quality of extracted Audio Data:" (Good), "Reading extra Audio Info works:" (Yes), "Writing works:" (Yes), and "Simulated Writing works:" (No). At the bottom are "Send Email" and "Cancel" buttons.

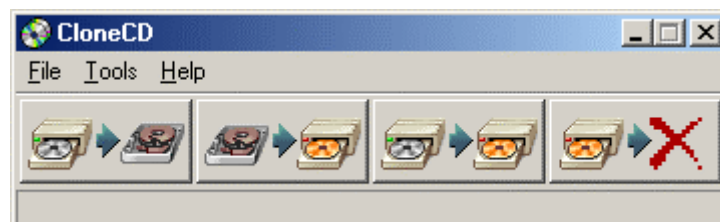
Device	Normal read works:	Reading copy protected CDs works:	Quality of extracted Audio Data:	Reading extra Audio Info works:	Writing works:	Simulated Writing works:
PLEXTOR CD-R PX-W124TS (HA0, ID2)	Yes	Yes	Good	Yes	Yes	No

CloneCD Skins

CloneCD supports also "Skins". That means you can change the way that program looks like with your own graphics! Under "Tools">> Select Skin you can setup where your skins are located and select from them. The default directory for put your skins is under "CloneCD/Graphics" directory:



If you now select, for example, "Modern" skin you will get:



Below are some links for additional skins:

1210A Agro 83bj60_winstd Flames Burn CD Head Hot Fire Copy Guys	Smooth Ski Burn me Agro2 Floppy Comic Generic First Steps Gamez Board	Buttons Futurama Jellybelly
---	---	---

You can get more skins from [CloneClinic](#) website. If you wonder how you can make your own skins visit this [page](#).

Various Protection Tests - Page 1

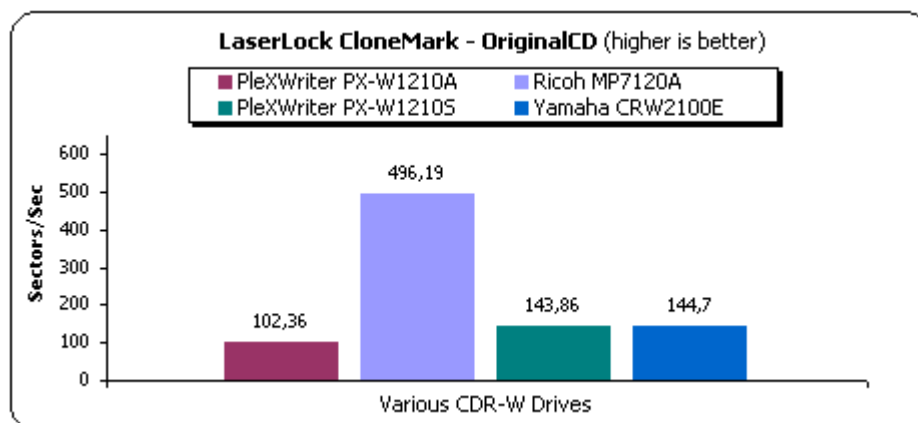
Test machine

WinMe OS
Soyo 7VCA
Celeron II 566 over clocked to 850 MHz
128MB SDRAM PC 133
WD 18GB UDMA 66
Quantum Fireball EX 6.4 GB UDMA 33
DAWI 2975 - PCI (ULTRA) SCSI Host Adapter
ATI AIW 128
Plextor UltraPlex 40max firmware v1.04
PlexWriter PX-W1210S firmware v1.00 (TLA#000)
PlexWriter PX-W1210A firmware v1.05 (TLA#000)
Yamaha CRW2100E firmware v1.0D
CloneCD v2.8.3.1

LaserLock Tests

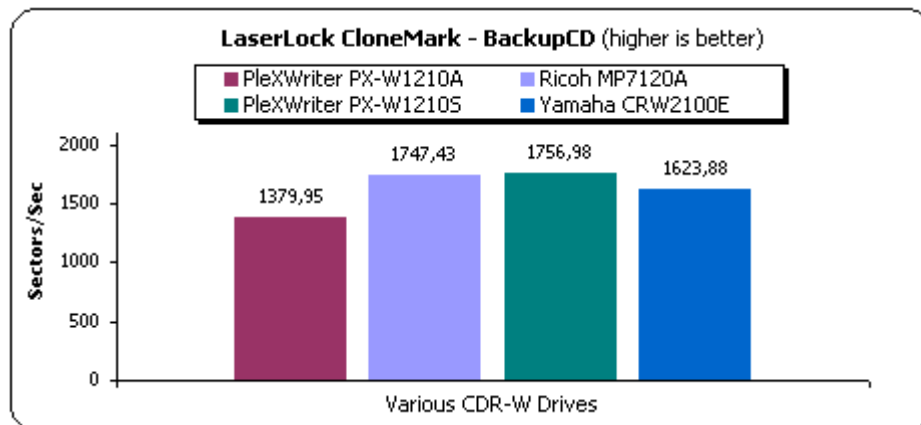
This type of CD stores its protection in the MainChannel data from the CD; therefore only options regarding error handling are useful in order to create a safety backup. Usually it has over 6300 bad sectors, which must be read.

Most of the drives we have tested make a LOT of time reading the original CD. Especially the Plextor drives are not the best choice for reading LaserLock protected CDs. When we say not best choice it means that the Plextor drives are SLOW when using them for reading the original CD compared to other drives. However things are not the same with the backuped LaserLock protected CD. It seems that all drives read it much faster than the original one. Below are some results using various LaserLock protected CDs and various drives (bigger is better) using both **Fast Skip Error** and **Intelligent Bad Scanner** ticked options:



As you can see most CDR-W drives have a hard time when reading LaserLock protected CDs.

Below are the results from the LaserLock backup CD. As you can see the reading speed is way FASTER than from original CD. Why? Check out our [FAQ!](#) For that mode the best reading option is **Fast Skip Error only** ticked:



Conclusion

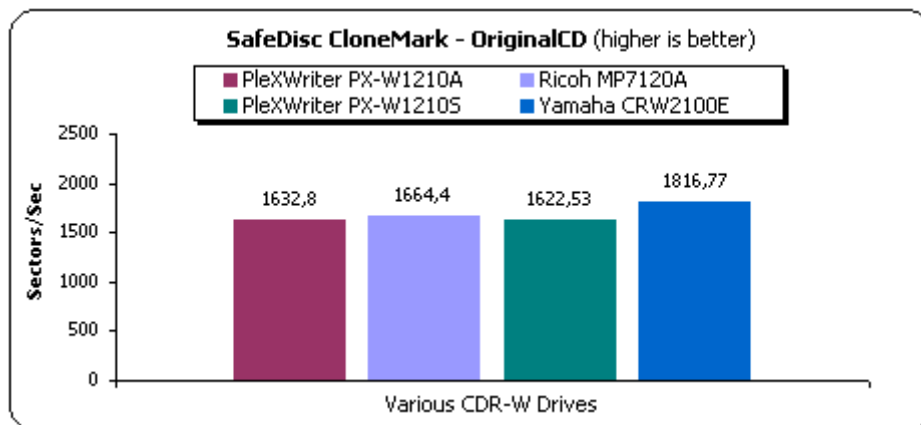
There are huge differences in time when reading the original and the backup LaserLock protected CD. From our tests the best settings for both **Original CD** are to tick both the "Intelligent bad sector scanner" and the "Fast skip error". On the other hand the best setting for **Backup CD** is the "Fast skip error" only.

Various Protection Tests - Page 2

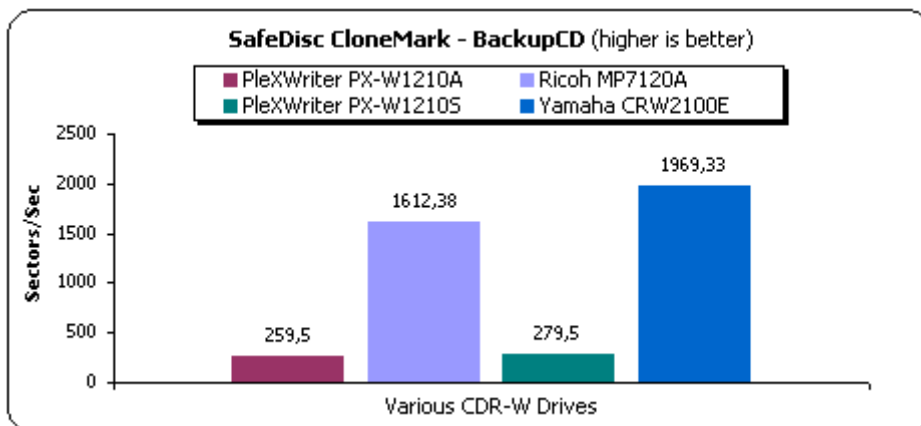
SafeDisc Tests

Like LaserLock protected CD, SafeDisc CD stores its protection in the MainChannel data of CD. This protection also uses lots of unreadable sector, which usually starts at sector 800+ and ends at sector 10000+. Unlike LaserLock protection, nothing at the surface of the CD is visible showing that there are unreadable errors.

Most of the drives we have tested can read a SafeDisc protected really FAST! All Plextor drives for example read both original and backup SafeDisc protected CD very fast! Very good choice for SafeDisc protected CD. It seems that some drives read the backup CD slight faster than the original one and some others not. Below are some results using LaserLock protected CD (original) - Euro2000 - and with "Fast skip error" mode only:



Plextor drives seems to have some problems reading from the backup CD and gives back much lower performance than Ricoh and Yamaha drives:



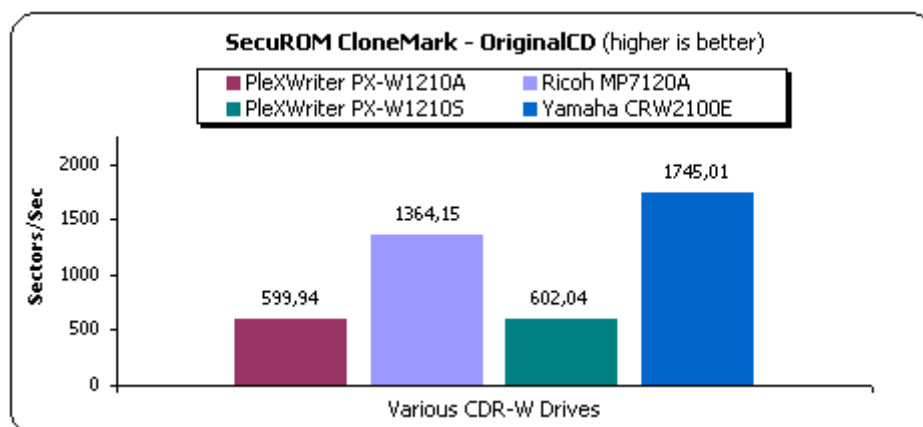
Conclusion

Wherever you own a good CD reader or not for ignoring read errors, best option for SafeDisc protection (for both original and backup cds) is "Fast Skip Error"; the "Intelligent Bad sector Scanner" is not good for the most drives (even in some cases it might give you slight better results).

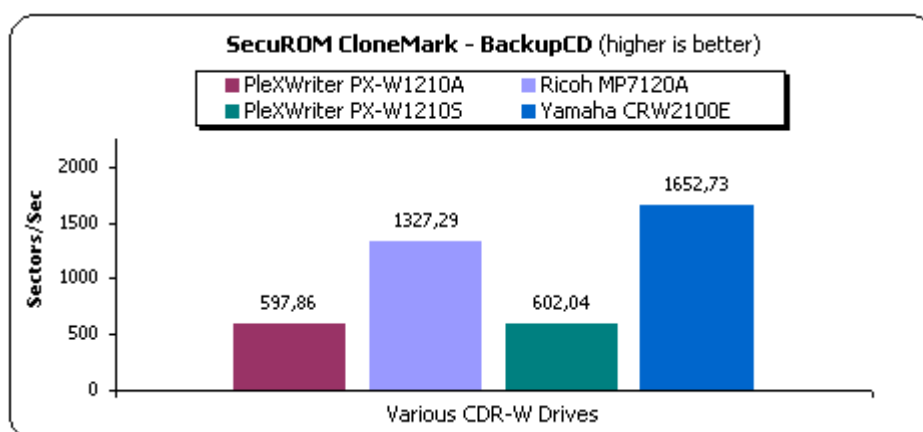
Various Protection Tests - Page 3

SecuROM Tests

Unlike SafeDisc & LaserLock protection, SecuROM protection stores its digital ID in the SubChannel Data. Also, SecuROM protected CDs don't contain any unreadable sector. Only one option needs to be ticked for read setting: "Read SubChannel Data from Data Track".



Comment: All Plextor drives can read SecuROM protected CDs but Ricoh and Yamaha much faster.



Comment: The same results we will get using the backup SecuROM protected CD.

LibCrypt Tests

Like SecuROM protection, LibCrypt store its digital ID in the SubChannel. The only difference is that during writing process, option "Don't repair SubChannel" need to be ticked since LibCrypt need the full 96 bytes SubChannel Data (all 8 SubChannel: P, Q, R, S, T, U, V, W 16 bytes each) whereas SecuROM uses only 16 Bytes Q-SubChannel Data. The reason for the 96 bytes requirements on PSX is, that the CRC of some SubQ Data needs to be incorrect, and when writing 16 Bytes SubChannel Q the writer corrects that on its own.

Update: Recent game MediEvil 2 seems to be an exception: SDC/Paradox reported us that game crashes at Level 3 even if it was backed up with CloneCD. :(

DiscGuard Tests

Lots of our visitors reported that CloneCD failed to make backups of DiscGuard & CD-Cops protected CDs (unfortunately we were not having such protected CDs for making tests).

In DiscGuard case, it seems that this protection isn't really reliable: this protection is in a way *too good* since some CD-ROMs refused to run the original CD containing that protection (e.g. Colin Mc Rae Rally) and editor (Codemaster) itself has released a patch that removed the protection!!

CD-Cops Tests

In CD-Cops case, we didn't found such CD in order to make tests. However as someone said: "...The CD-Cops protection measures the time for reading some slightly damaged sectors, and the right behaviour cannot always be reproduced correctly. Also don't forget that CD-Cops doesn't work with all CD-Rom drives even you got the original CD. Maybe that's the reason why this protection isn't so wide spread..."

Another message:

"..Hi guys! All of you know that CloneCD makes trouble with CD Cops protected CDs, but the fault is not CloneCD. It is the media you use. I'm testing now different medias. The only two Media Types that worked perfectly on every computer and drive I could test, are: Mitsui Gold 74 and Kodak Gold Ultima 74. Looks like that Gold media's have the best reflection on the market and so they work with CD Cops protected programs.

The media I have tested so far: TDK, Verbatim, Traxdata, Fuji, Tevion, Philips, Sony, Lead Data, Teac, Yamaha and Basf..."

.

Best settings for all CD protections

Some readers have more facility to ignore read errors, theses drives are Toshiba drives and some Plextor model and surely other, we will name theses drive "good reader" and other common drives will be named "normal reader".

	Fast Skip Error	Intelligent Bad Sector Scanner	SubChannel Data from Data Track	SubChannel Data from Audio Track	Don't repair SubChannel
LaserLock	Yes	Yes	No	No	No
SafeDisc	Yes	No	No	No	No
SecuROM	No	No	Yes	No	No
Playstation Protected CD (LibCrypt)	No	No	Yes	Yes (games like MediEvil 2 need it)	Yes
Playstation non LibCrypt Protected	No	No	No	No	No
ProtectCD	No	No	Yes	Yes	No
Audio CD's	No	No	No	No	No
Karaoke Audio CD's	No	No	No	Yes	No

Our opinion

Positive (+)

- Ability to make backups of most major protections found on the market nowadays (SafeDisc, SecuROM, ProtectCD, PSX LibCrypt)
- Latest versions supports most current CDR-W drives with "SAO RAW" compatible mode!
- Low price (45\$)
- You don't need any ASPI drivers in order to run it
- Very good engine for ignoring read errors
- Don't causes any problems to other CDR Software
- Regulars updates for fixing/updating program features

Negatives (-)

- It doesn't defeat the boot protection scheme on Playstation CDs, so you still need a Modchip or Action Replay in order to run your safety backup (well, no one has succeeded so far to find a solution :-)
- Some protections less present on the market can't be copied yet (DiscGuard, CD-Cops). Also some titles protected with LibCrypt (like MediEvil 2) seems not to be copyable...

Final conclusion

Released earlier in November 99, CloneCD has been the 1st innovative CD-Replicator, which allows the user to make a perfect safety backup of the majority protected CDs found on the market. Moreover, we could also add that it is one the best CD replicator since it has unique options, which are not found in competitor's software (CDRWin, Fireburner). [PadusDJ](#), BlindWrite and WinOnCD (!) added DAO-RAW at their latest versions and as it seems, they will be strong competitors for the near future..

Wish list for coming versions

- Support BIN/CUE images (extract/burning)
- Support ISO images (extract/burning)
- Support for multiple CDR-W drives burn
- Option to leave the CD open
- Ability to burn RAW SAO on a drive with RAW DAO

FAQ

What is exactly MMC DAO RAW?

RAW-MMC-DAO is the technology CloneCD uses to make perfect copies. It doesn't use any CUE sheets or similar. The data is streamed to the writer from the begin of the lead-in up to the end of the lead-out in one go. The SubChannel data is transmitted too, so the blocksize is 2448 bytes instead of 2352.

What is exactly MMC SAO RAW?

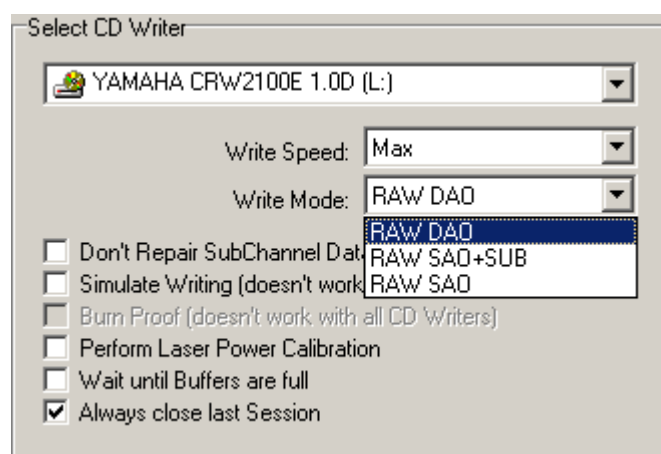
RAW-MMC-SAO is the technology, which CloneCD uses in order to be compatible with recorders, which not support MMC DAO RAW writing. It does not use any CUE sheets or similar. The data are transmitted to the writer by sessions. The MMC SAO RAW writing has the following restrictions (which do not apply to DAO-RAW mode):

- Multisession is not allowed yet; therefore CD-Extra and Photo CDs can't be copied with this mode.
- "Crazy Disc Layouts" can't be written. This is a restriction of SAO writing, not of CloneCD!
- Any copy protection relying on SubChannel Data will probably not be copied. This is a restriction of SAO writing, not of CloneCD!
- Media Catalog Numbers (MCN) and International Standard Recording Code Numbers (ISRC) will not be recorded yet.
- Indices and Pauses on Audio CDs will not be recorded yet.
- Depending on the recorder model, Tracks smaller than 4 seconds and Enhanced CDs can't be recorded.

Will TAO be supported ever?

As CloneCD author said: "...I already have written a TAO write engine, but I've discarded it. Reason: RAW-TAO worked, but only with those writers which already supported SAO or DAO. There wasn't much sense to confuse people with another option..."

How I can enable DAO-RAW for my Yamaha CRW2100E?



CRW2100x series models.

There is a special trick in order to prevent CloneCD checking the CDR-W drive capabilities and **displaying DAO-RAW** even the drive doesn't support it. Users of Yamaha CRW2100E should wait until CloneCD officially support it, since the current firmware (1.0D) build don't seem to support it correctly (when you try write DAO-RAW you will get error message). Possible this will fixed with new firmware revision since Yamaha have promised DAO-RAW in the new

What is this SubChannel data? What is MainChannel data?

The SubChannel data is used to store various information's. It can be data used for CD-Text or Karaoke CD (CD+G) for example, but also for data that is used for copy protection: SecuROM & LibCrypt used Digital IDs which are stored in this SubChannel. MainChannel is the actual "information" stored on the CD: the user data + check sums, 2352 bytes "raw" data. Both the SafeDisc & LaserLock protections use this channel to store their protection.

Why can't I select the "Don't repair SubChannel Data" option? In this case, can I make backup of SecuROM protected CD?

This option is only available if your writer supports writing of 96 Bytes SubChannel Data (CD-Text, CD+G). This is a hardware restriction, not software restriction.

Your writer still writes MMC-DAO-RAW and will work with CloneCD with the following restrictions:

- No CD-Text writing
- No writing of copy protected PSX CDs (LibCrypt protected)
- No writing of Karaoke (CD+G) CDs

Yet, you can still make safety backup of SecuROM protected CD since uses only 16 Bytes Q-SubChannel Data whereas LibCrypt protection (PSX) needs the full 96 bytes.

Why the backups of new SecuROM protection work only with CD/DVD-ROMs?

As you know, by now, SecuROM protection is a piece of cake for CloneCD. However Sony improved the SecuROM protection and it's newest build which found on games (such as VRally 2 Expert Edition) added a special trick in order to prevent the backups.. Sort off we must say.

The reason why your backups will work only with CD-Rom drives and not with CDR-W drives is that the new SecuROM protection checks to see if the media has ATIP information.. CDR-W drives can read them with a ReadTOC command (with format code ATIP) so when that happens the backup refuses to run! CDR/CDRW media have ATIP information stored but a "silver" (aka pressed) CD doesn't. Nice move from Sony however as we said you could still play your backups from normal CD/DVD ROM. Why? Simple. They don't support reading of ATIP!

We imagine that this trick probably will be used from other protection authors quite soon...

As I heard there are 2 RAW DAO modes. What are their main differences?

There are 2 RAW DAO modes. DAO RAW 96 and DAO RAW 16. DAO RAW 96 is only necessary for LibCrypt and DAO RAW 16 handles everything else. Few drives support only DAO RAW 16 (like HP 8250 and newer Philips drives). Plector/Sony CRX support only DAO RAW 96. Mitsumi and Ricoh have both. You can tell if a drive has DAO RAW 16 if the "raw" checkbox in CDRWin works. DAO RAW 96 is the "supports CD-G and CD-TEXT" in CloneCD compatibility list.

LibCrypt doesn't REALLY need the R-W SubChannels. Like SecuROM, the protection is stored in sub-Q. You can read as RAW 16. So CDRWin can read SecuROM and LibCrypt just not in the normal "BIN/CUE" way. You have to do "read sectors".

When *writing* in 16 byte mode, the drive corrects the CRC of sub-Q. When writing in 96-byte mode, the drive doesn't correct anything. The extra 80 bytes (Sub R-W) don't do anything helpful for LibCrypt/SecuROM. 96-byte mode just disables CRC correction, and that's all that LibCrypt needs more than SecuROM!

Why most other current CD Copy software will not make working backups of my CDs?

Most other CD Copy software (CDRWin, Fireburner, BlindWrite) will not work since they don't allow writing of SubChannel data.

CDRWin and Fireburner: CDRWin only knows DAO RAW 16, but it does not write custom data (it's determined by the CUE sheet). RAW 96 don't let you do anything special besides Karaoke and LibCrypt. If you use BlindWrite and PadusDJ, SafeDisc/LaserLock work. Summarize: RAW16 can copy SafeDisc, SecuROM and LaserLock not LibCrypt and Karaoke. RAW 96 can copy all if the software can do the appropriate tricks...

Since CDRWin/FireBurner supports RAW16 how come backups will not work?

1. SafeDisc/LaserLock: You can't copy these. You can only fake these protections. Basically, Clone CD, when reading, replaces bad sectors with data that, when burned, makes a "fake" bad sector. By burning data with intentionally corrupt EDC/ECC data, the drive will think it found a bad sector when it really didn't.

CDRWIN does not do this when reading. Reading is the problem here, not writing. CDRWIN can write such bad data through its DAO RAW 16 mode, but not do the necessary tricks when reading. However, sometimes, when you use CDRWin's "Replace" option to read, it will act like Clone CD. You have to choose Replace when reading, and Raw when writing.

2. SecuROM: (LibCrypt not covered since CDRWIN doesn't do DAO RAW 96)
Although DAO RAW 16 is a sufficient mode to write SecuROM, CDRWIN doesn't make full use of it. To copy SecuROM, you need to write custom sub-Q data to the disk. DAO RAW 16 lets you do this, but CDRWIN doesn't have a way to store sub-Q in a BIN file and have it written to disk. CDRWIN generates the sub-Q based on the CUE sheet. CDRWin's DAO RAW 16 mode is identical in capability to SAO RAW for this reason.

Another note about #1: SAO RAW works identically to DAO RAW 16 with respect to SafeDisc and LaserLock. Same story must go for Fireburner.. If Fireburner adds CCD/IMG/SUB file support, SecuROM will work immediately (provided that you read with clone CD). BlindRead/BlindWrite. As far we know they don't do SecuROM so they act like CDRWIN.

Why my drive reads backups faster than the original CD?

The reason that copies can be read faster than originals is because copies do not actually have physical errors! The physical errors are represented by bad sectors, which CloneCD produces. They sectors aren't truly unreadable, on a copy, they're valid audio, but not valid data.

Data sectors have EDC/ECC for detecting and helping fix (minor) errors. If you burn bad EDC/ECC, the reader will try to correct with invalid correction data and you will get a read error, even though it can physically read the sector just fine. However there are some drives that some drives can actually differentiate CloneCD bad sectors and actual bad sectors (such as HP 8100/8200/9100/9200/9300/9400). But the CloneCD smart engine can handle them quite good ☺

Why I cannot read 96bytes SubChannel data with Plextor UltraPlex40x?

As CloneCD author said: "...The UltraPlex is known to have problems with certain SubChannel data on data tracks (namely SecuROM protection). Audio+SUB (Karaoke) shouldn't cause any

problems, but I haven't looked at the quality of the R-W channels (where the CD+G information is stored)..."

Why my HP8100 cannot work with CloneCD?

Cause it doesn't support neither SAO nor DAO RAW! If do you want to make safe backups of your protected CDs get a better drive ☺

Can I write 99min CDs with CloneCD?

Not yet! CloneCD stops writing when it reaches 90min. ☹

Can I make my own compilations with CloneCD?

No. CloneCD main use is for dupes only.

How I can backup GD CDs with CloneCD?

You cannot. GD CDs are not readable with normal drives. Read more about [Dreamcast protection](#) and the possible ways to backup them.

Which are the best settings for x game?

You need to recognize the protection of the CD or use an add-on called "[Perfect Copy](#)", which has a database with various games and the proper CloneCD settings.

Does CloneCD defeat the boot protection scheme found on Playstation CDs?

No, you still need a modchip in order to run your safety backup.

I saw that my burner can do DAO RAW Writing, but I failed copying a SecuROM CD, how come?

Two cases must be distinguished: protection that are stored in the SubChannel Data and ones that are stored in the MainChannel Data of the CD. In 1st case, you need to check (from the "hardware required" section) if your CD-Reader/CD-Writer can read/write "SubChannel from data track" since SecuROM protection store its Digital ID into the SubChannel of the CD. In second case, SafeDisc protection is stored in the MainChannel so most CD-ROMs can read this area.

I've just made a backup of a protected game; will I be able to copy it with another CD-R software?

You will need software that is able to perform RAW writing. As far we know, only CloneCD can do fully (MainChannel & SubChannel) write in this mode. CDRWin & Fireburner can write in RAW MODE but only for protection that are stored in the MainChannel (SafeDisc, LaserLock), so they can't handle protections that are stored in the SubChannel area (e.g SecuROM & LibCrypt protections).

How come games can be protected by using SubChannel data? As far i know not all CD-Rom drives can read the SubChannel data but can play the original CDs!

This is indeed a very intelligent question. It is indeed possible for an application to check, if a based-based protection is present, even if the reading device can't read SubChannel data with CloneCD. That actually makes SubChannel based copy protections so effective.

If a CD-ROM can play audio disks, then can read subcodes (at least minimally). When you play an audio disk with cdplayer.exe, you'll see the current time on the disk. That time comes from the Subcodes! What you can do is turn the volume off for the CD-ROM then ask it to play track 1 as audio (most drives will blank the audio if you try to play a data track, but turn the volume off as a precaution) then, as it's reading, retrieve the SubChannel data. Actually all CD-ROMs can read SubChannel data, not in the way you would like them to, but yes. It isn't exactly precise when you do that trick there is one completely unused and one almost unused field in the subcode data more than enough storage for copy protection decrypt codes.

How is this possible?

To check for a protection, you don't need to read the SubChannel data exactly. It is sufficient to do normal SEEKs and READ and ask the drive about the SubChannel data with a Read SubChannel Data from current position, as the protected application "knows" where to look. Almost any drive supports this. If you want to duplicate the protection, this method will not work. (Well, it would take weeks to find the position of the protection on the CD).

To duplicate the protection reliably (and in an acceptable time) the device used for reading the original must transmit the main- and SubChannel data in one stream (somehow synchronized), so this data can be written precisely. Note, that most drives have a fixed "Main- to SubChannel data" offset error, as the MainChannel data is fed through the ECC electronic and the SubChannel data is passed on unmodified. For example, reading sector x will give you MainChannel data of sector x, but SubChannel data of sector x+y. CloneCD will compensate this offset with a very cute method (patent pending).

Hardware Suggestions

Below is a list of the most recently working CDR-W and CD-Rom drives based in CloneCD homepage. Note that here listed only the drive which support "DAO RAW" writing mode and not "SAO RAW" mode. Drives, which are not listed here, will probably work in the "SAO RAW" write mode with CloneCD. However with that mode you will not be able to backup "SecuROM" and "PSX LibCrypt" CDs.

Compatible CDR-W drives (with SAO RAW mode)

CD-Writer	Writing Supported	Can write CD-Text & CD+G	Write Simulation	Normal Read	Read SubChannel Data from Data Tracks	Read SubChannel Data from Audio Tracks
Ricoh 7040, 7060	SAO RAW	SAO RAW	SAO RAW	Yes	Yes (?)	Yes (?)
Sanyo Drives	SAO RAW	SAO RAW	SAO RAW	Yes	No	No
TEAC 56S, 58S	SAO RAW	SAO RAW	SAO RAW	Yes	Yes* (*Only 16 Bytes SubChannel Data)	Yes* (*Only 16 Bytes SubChannel Data)
YAMAHA all models Philips PCA460RW (this model is manufactured by YAMAHA)	SAO RAW	SAO RAW, not all models support CD Text	SAO RAW	Yes	Yes	Yes

If you want to use CloneCD to make working backups of copy protected CDs, the best combinations are:

- Toshiba CD-ROM XM-6602B, 6702B for reading
- Toshiba SDM1201/SDM1212/SDM1302 DVD-ROMs for reading
- Mitsumi 4802TE, 4804TE for writing
- HP 8200i / 9100i / 9110i / 9200i / 9210i / 9300i / 9310i for writing
- Sony CR-X 120E, CR-X 140E / CR-X140S / CR-X145E / CRX-145S / CRX-160E for writing
- Plextor PX-W820 / PX-W8220 / PX-W8432/ PX-124TS/ PX-W1210A / PX-W1210S for writing
- Ricoh 7080A, 9060A, 7120A, 9120A for writing
- TDK VeloCD 8432 / 121032 for writing
- Lucky Goldstar LG CED-8120B for writing

If you want to use a single device for reading and writing, we recommend:

- Plextor PX-W8220, PX-W8432, PX-W124TS, PX-W1210A, PX-W1210S
- HP CD-Writer 8200i, 8210i, 9100i, 9110i, 9200i, 9210i, 9300i, 9310i, 9310i
- Sony CR-X120E, CR-X140E/S, CR-X145E/S, CR-X145E/S, CR-X160E/S
- Ricoh 7080A, 9060A, 7120A, 9120A
- TDK VeloCD 8432, 121032
- Mitsumi 4804TE
- Waitec WT2082, WT3284

Compatible CDR-W Drives (with DAO RAW mode)

CD-Writer	Writing Supported	Can write CD-Text & CD+G	Write Simulation	Normal Read	Read SubChannel Data from Data Tracks	Read SubChannel Data from Audio Tracks
Plextor PX-W1210A, TDK VeloCD 121032, PX-W1210S	Yes	Yes	No	Yes	Yes	Yes
Plextor PX-W124TS (Firmware 1.04 required!)						
Plextor PX-W8432 Newest (Firmware 1.07 required)						
Plextor PX-W4220 (Firmware 1.01 required. Newer Firmware 1.02 and 1.04 doesn't work)						
Plextor PX-W8220 (Newest Firmware 1.04 required)						
Plextor PX-R412 (Newest Firmware 1.07 required)						
Plextor PX-R820 (Newest Firmware 1.07 required!)						
Only units manufactured after March 1999 (those which came with Firmware 1.03 or later) will work!						
TDK VeloCD 8432 (Newest Firmware 1.07 required!)	Yes	Yes	Yes	Yes	Yes	Yes
Teac CDW-54E (Drives with firmware 1.1b and 1.0x will work)						
Lucky Goldstar LG CED 8120B	Yes	Yes	Yes	Yes	Yes	Yes
Sony CDRW CR-X120E, CR-X140E, CR-X140S, CR-X145E, CR-X145S	Yes	Yes	Yes	Yes	Yes	Yes
HP 8200i, 8210i, 8290i 9100i, 9110i, 9200i, 9210i, 9300i, 9310i						
Ricoh 7120A, 9080A, 9120A	Yes	Yes	Yes	Yes	Yes	Yes
Ricoh 7080A / Caravelle RW-8432FBA (Firmware 1.10 or better required!)	Yes	Yes	Yes	Yes	Yes	Yes
Ricoh 9060A / Caravelle RW6424DA (Firmware 1.60 or better required!)	Yes	Yes	Yes	Yes	Yes	Yes
WAITEC CD-R WT2082 (Firmware 1.04 or better is required!)	Yes	Yes	Yes	No	Yes	Yes
WAITEC CD-R WT3284 (Firmware 1.07 or better is required!)	Yes	Yes	Yes	No	Yes	Yes
Philips CDD-3600, CDD-3610	Yes	No	Yes	Yes	No	No
Samsung SW-204 (Newest Firmware v1.21 required!)	Yes	?	?	?	?	?
ALDI / ARAL / TEVION ATAPI CD-R/RW 4X4X32 ACER ATAPI CD-R/RW 4X4X32 ACER ATAPI CD-R/RW 6X4X32 ACER ATAPI CD-R/RW 8X4X32 CyberDrv CDRW602 Philips all ATAPI Models, except PCA-460RW HP 7100i, HP 7200i, HP8250i IOMEGA ZIPCD 4x650 Memorex CRW-1622 Traxdata CDRW2260+ Traxdata 4424Plus WAITEC WT2422EI	Yes	No	Yes	Yes	No	No
Mitsumi CR-4801TE						
Mitsumi CR-4802TE	Yes	Yes	Yes	Yes	No	No
Mitsumi CR-4804TE (*Only with read speeds up to 4x)	Yes	Yes	Yes	Yes	Yes*	Yes*

Compatible CD-Rom Drives

CD-ROM	Normal Read	Read SubChannel Data from Data Tracks	Read SubChannel Data from Audio Tracks	Comments
DELTA OIP-CD4400A (ATAPI)	Yes	Yes*	Yes*	*Only from original disks, not from copies!
ACER M-A45DB 50DT (ATAPI)	Yes	Yes	Yes	Setting read speed doesn't work
AOPEN CD940E/AKU PRO (ATAPI)	Yes	Yes	Yes	
TEAC CD532E, CD532E-A*, CD540E (all ATAPI)	Yes	Yes	Yes	Newest Firmware recommended CD540E - Setting read speed doesn't work, very slow skipping read errors
TEAC CD532E-B	Yes	Yes*	Yes*	*only 16 Bytes Sub-Q Data
TEAC CD532S	Yes	Yes*	Yes*	*only 16 Bytes Sub-Q Data.
TOSHIBA CD-ROM XM-6202B*, XM-6402B*, XM-6502B*, XM-6602B, XM-6702B (all ATAPI)	Yes	Yes	Yes	The XM-6602B skips read errors faster than the XM-6702B
PLEXTOR most CD-ROMs	Yes	Yes	Yes	
SONY all ATAPI CD-ROMs	Yes	No	Yes	
SONY CDU-4011 ATAPI CD-ROM	Yes	Yes	Yes	
TOSHIBA DVD-ROM SDM-1201 (SCSI), SDM-1202*, SDM-1212, SDM-1222 (ATAPI), SDM-1302 (ATAPI)	Yes	Yes	Yes	
PIONEER DVD-303S (SCSI)	Yes	No	No	
NEC CD-3010A (SCSI)	Yes	No	Yes	
HITACHI DVD-ROM GD-2500	Yes	No	Yes*	*only 16 Bytes Sub-Q Data

Tips

How I can protect a CD with CloneCD?

- Create a CD with two audio tracks at the end. How? Open your favourite CDR software and after finished adding data insert 2 audio songs on the end and close disc.
- Open file.ccd
- Find Lead-Out entry. How? Get CDRWin, press 6th button ("Table of Content") and look for total disk time: Remember the LBA number (example: 157275). Now look in the .ccd file for 157275. That's the entry you have to edit.
- Change PMIN, PSEC, PFRAME to a place in between the 2 starts of audio tracks
- Burn and ignore the warning.

The above procedure is not a so effective method to protect your CDs. You can copy data with explorer to the HD and also copy the first audio track, but not the second audio track (you can listen it however). Another idea is to try to burn a CD without Audio-tracks, but only DATA, and do the same procedure...

How I can copy an AudioCD with FAKE TOC?

An example for such a CD is "Techno Club Vol.9". You'll need a recent version of CloneCD (above 2.2.1.1 or 2.3.1.1):

- Read the CD (Enable reading of SubChannel Data from Audio Tracks, if desired).
- When CloneCD starts reading Session 2, you will get read errors. Click "**STOP**".
- If CloneCD asks, if you want to delete the partial image, say "**NO**".
- Now burn the CD. CloneCD will inform you, that Lead-Out and Image size don't match.
- Ignore that, use default settings and hit OK. You will get a protected copy.

In case you want to remove that protection read the Image as described above. Before writing, edit the created *.ccd file: Search for POINT=B0 entry. Modify PMIN, PSEC and PFRA to 255 each. Copy protection is gone!

I installed Plextor Manager2000 and I cannot read SubChannel data with my Plextor drive...What I can do?

You can uninstall Plextor Manager2000 and re-install CloneCD. That should fix it. You can also make keep the Plextor Manager2000 and read SubChannel data if you:

- Uninstall Plextor Manager and reboot your PC
- Reinstall CloneCD and reboot
- Check to see if the drive now reads the SubChannel data
- If it does, reinstall Plextor Manager software and reboot PC

All being well you should still be able to read SubChannel data with Plextor Manager running!

Can I make a CD with FAKE TOC (ex. 1.3GB) with CloneCD?

You need to edit the .ccd file. Change the PMIN of the POINT=A2 entry to something "BIG" like 90 or 99. If you burn, CloneCD will tell you, that image and TOC won't match (which is correct). Just tell CloneCD to leave the TOC "as is" and write until the end of the image is reached.

Future Plans

Here are some of the plans for CloneCD 3.x series as the CloneCD author has posted. As he says: "...Clone 2.x is still too complicated. Too many settings and many problems with hardware. Therefore, there will be some radical changes:

- It doesn't make sense, to offer settings, the devices can't perform
- It doesn't make sense, to disable settings, if the device performs perfectly

Clone 3.x new features

The settings will be divided in "drive capabilities" and "user settings". CloneCD will get a "Test Mode". With this mode, you can burn a "Calibration CD", and use this CD to calibrate all your reading equipment automatically. The CD will contain all "difficult" combinations, and the reader will be calibrated automatically. This includes reading of SubChannel data, Best Error Skip settings, best numbers of retries, etc. The results will be stored in the registry, so the calibration only needs to be done once for every reader. This is the major change.

Here are some others:

- Burning "on the fly" (important for "Burn Proof")
- Verify of created CD
- Pausing of reading. It can be continued later, even if CloneCD was closed
- User settings can be saved in "Sets" (e.g., Audio CD, SafeDisc, SecuROM, etc.) Loading a Set for a device incapable of a required feature will cause an error, e.g.: "Device TEAC CD-ROM 532S can't perform requested settings for Set SecuROM"
- Sounds can be selected (This will actually be in the next CloneCD release 2.x)
- Windows NT/2000 Kernel Mode driver, so CloneCD doesn't need to run in Admin mode
- Analysis of Source CD with User Setting suggestions
- (Hopefully) simpler user interface.

CloneCD 3.x is scheduled around November 2000, so all registered CloneCD users will get this update *for free*. Some other coming projects:

VirtualCloneCD

Allows you to mount your CloneCD images as a "Virtual CD drive". VirtualCloneCD will have at least the same capabilities as CloneCD, probably even more (CD-Cops shouldn't be a problem). The image file can be on a Network or locally.

CloneDVD

is probably *not* what you expect (or does anybody has a DVD-Burner yet?), and the working title is misleading, too. In fact, CloneDVD will mount your DAT Tape Drive (!) as a "Virtual DVD-Drive". You can play your movies directly from the tape. Just like the "good old VCR", only digital and the cartridge are much smaller. Depending on DAT/DVD-R media prices, the project might be cancelled / changed...

RegionKiller

This nice little tool installs itself in the Windows driver stack, and reports any DVD inserted in your drive as region free. The result is basically what DVDGenie does today, but my tool is "cooler", as it works with every player, even those that use Windows region settings. (You will still need a RPC-1 DVD drive)..."