

RSJ CD-Writer for Windows 95

RSJ CD-Writer for Windows 95

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Preface

With RSJ CD-Writer you have purchased a product which is totally different to other existing mastering programs -- you will notice that right from the start:

RSJ CD Writer provides an own drive letter for your CD Recorder, enabling uncomplicated access to the CD-Recorder – just like hard disks. This saves you from collecting, sorting and combining the files to be written to CD.

In each chapter you will find many useful tips and examples on how to successfully use this software. We hope that you enjoy working with RSJ CD-Writer.

This documentation offers information on the following subject fields:

Installation	Installation procedure of RSJ CD-Writer for Windows 95
Operation	General guide for the correct usage of the file system and <i>CD-View</i>
Technical Details	Basic background information
Reference	Description of commands, settings and programs
Help on errors	Definition and removal of eventual malfunctions
Appendix	Supported hardware and standards, ...

Table of contents

RSJ CD-Writer for Windows 95	1
Preface	3
Table of contents.....	4
Installation	6
Copy files to CD	7
Introduction to the file system.....	7
Formatting the CD.....	8
Writing to the CD.....	8
Finalize Session.....	9
Copy Audio-CDs	11
Copy CD-ROM's/Data-CDs.....	12
Reference	13
File system settings.....	13
General	14
File system settings	14
CD-View	15
Start CD-View.....	15
Start from the context menu.....	15
Command line start for CD-ROM or CD-Recorder	16
Hard disks (temporary storage).....	16
CD-View Interface	17
Tool bar	17
Track list.....	18
Copy WAV-files into Audio-tracks.....	19
Copy tracks.....	19
Close session	21
Track size and space required	21
Technical details	23
ISO9660	23
Format of a CD.....	23

Table of contents

Track	23
Multisession CDs.....	24
Track mode.....	25
Audio	25
Mode 1, Form 1	25
Mode 1, Form 2	25
Mode 2, Form 1	25
Mode 2, Form 2	25
XA, Photo-CD, Multisession.....	25
XA.....	26
Photo-CD	26
Multisession	26
Long file names	27
Rock Ridge Extensions	27
Joliet.....	27
Tips and tricks	28
Error solutions	30
CDWPOPUP	30
Table of errors.....	31
Other errors	31
System requirements	33
Hardware	33
Software.....	33
CD-ROM	33
Appendix	34
Supported hardware.....	34
CD-Recorder	34
Restrictions	35
Mastering.....	35
Conditions of use	36
Index	37

Installation

The Recorder driver will be installed using Windows' plug and play features. The following starting situations have to be differentiated:

1st case: After you have set up the recorder hardware and restarted your system, Windows displays a message box "New hardware found" and a dialog telling you that Windows cannot provide a driver for your new device.

In that case you just have to click the "Have disk..." button, enter the path to the CD Writer installation files (usually A:\) and press "OK".

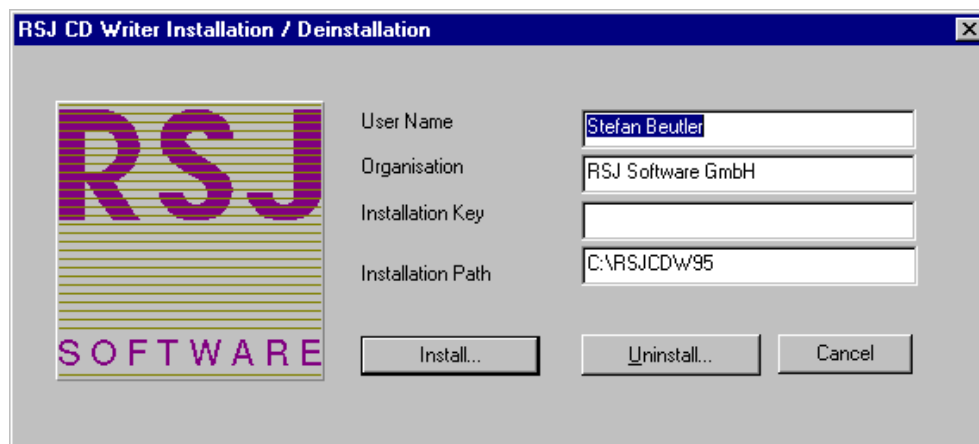
After system reboot, the installation program is launched automatically.

2nd case: During system boot, no message box is displayed (probably this is not the first boot after the recorder was attached), which could mean that Windows already uses some driver for the recorder.

Insert the RSJ CD-Writer Installation disk into your floppy drive, click the "Start" button in the task bar, select "Run..." and type

a:\install

where a: is the floppy drive's drive letter. This will launch the RSJ CD Writer installation program.



Fill in the required information and click "Install". After successful completion, reboot your computer.

Copy files to CD

This chapter describes the usage of RSJ CD-Writer, demonstrated through simple examples.

Introduction to the file system

After installation, the file system will be started automatically, so you do not need to start any programs to be able to use the file system.

Since the CD-Recorder receives its own drive letter, you can use the recorder like any other drive. To simplify matters we have assumed the following drive letters for our examples:

C: = hard disk, D: = CD-ROM, E: = CD-Recorder.

Note that the drive letters on your machine might be different.

Note: The recorder's drive letter can be changed using device manager (look up *CD-ROM drives* in Windows help or documentation).

In order to find out which drive letter the recorder received, open "My Computer" on your desktop:





Copy files to CD

Formatting the CD

Before you can start writing to a new CD you must format it.

To do so, open the context menu (use the right mouse button to click the CD Recorder in “My Computer”) and choose “format”.

Writing to the CD

You can use any program that is capable of copying or creating files to copy data to the CD recorder. Note that there can be only one file open for writing at a time.

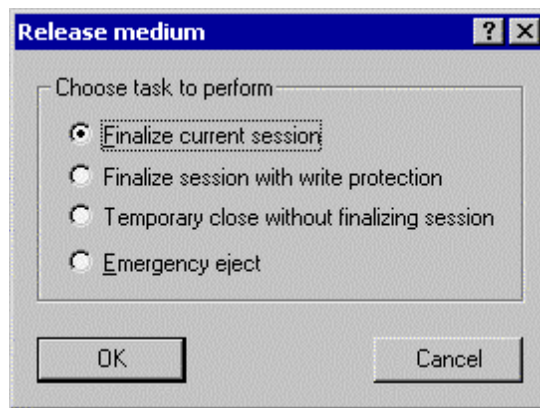
To copy a file using Windows’ Explorer, drag the file(s) with the mouse to the CD recorder object.

Finalize Session

After you have written the data to the CD you have to finalize the current session. This ensures that all data in the cache is written to the medium and therefore prevents data loss. Additionally, to make the CD readable for normal CD-ROM drives, the table of contents has to be written to the disk.

To finalize the current session, choose “Release CD...” in the recorder’s context menu.

The following dialog will appear:



Finalize current session

Closes the current session. Flushes the cache and writes the table of contents (TOC) and session information to the CD. This task takes up approximately 20 MB of disk space and makes the CD readable for normal CD-ROM drives.

Finalize session with write protection

Same as above, but additionally write protects the CD. To remove the write protection, choose “Remove write protection” in the recorder’s context menu.



Copy files to CD

Temporary close without finalizing session

Flushes the cache to the CD and writes the TOC. Use this option if you want to eject the CD without investing the 20 MB for session information right now. You can finalize the session later to make the CD readable for normal CD-ROM drives.

Emergency eject

This option discards the cache and is used to eject the CD in case of errors.

Copy Audio-CDs

You can use **CD-View** to copy Audio CDs easily and quickly. See chapter “CD-View” for more information.

To do so,

- Insert a blank CD into the CD-Recorder
- Start **CD-View** by choosing “RSJ CD-View” in the context menu of the target drive (CD-Recorder)
- Start a CD-View session for each source drive; the entry “RSJ CD-View” is located in the context menu of the CD-Recorder, a CD-ROM drive and in any subfolder of any hard disk.
- CD-View should show a blank window for the CD-Recorder (no tracks on the CD)
- CD-View’s status bar (at the bottom of the window) shows information about the number of existing tracks, the MBs used by these tracks, and the CD’s free space in minutes and MBs.
- Now select the tracks to be copied in the source session(s). You can also use Window’s Explorer as a source to copy .WAV files. CD-View creates a single track for each file.
- Drag the selected tracks or files to the target’s CD-View window
- Repeat the previous two steps until all desired tracks (titles) appear in the target CD-View in the desired order.
- Verify the target’s recording speed; make sure it is not too fast for the source device(s). If you copy audio tracks from a CD-ROM drive, note that most CD-ROMs read audio data with single speed, no matter how fast they can read data.
- Now press the record button in the target CD-View’s tool bar.
- After all tracks have been copied, you must finalize the session. To do so, press the “Finalize” (CD symbol) button in the target CD-View’s tool bar.

Copy CD-ROM's/Data-CDs

Data-CDs do not have to be copied with CD-View, since the file system is still available for that purpose; however, it offers the following advantages:

- It is easier and faster, because tiresome sorting and changing between different drives is avoided
- A 1:1 copy of the source-CD is produced
- A CD is written in just a few steps

Follow these steps to copy a data CD using CD-View:

- Insert a blank CD into the CD-Recorder
- Start **CD-View** for the CD recorder (see previous chapter for more details)
- Start CD-View for the source CD-ROM drive
- The recorder's CD-View session should show a blank window (no tracks on the CD)
- Now select all tracks in the source CD-View (CD-ROM drive).
- Drag the selected tracks to the recorder's CD-View session.
- Check the writing speed for the target (CD recorder) CD-View and verify it is not too fast for the source device.
- Press the "record" button in the target CD-View's tool bar.
- After all tracks have been copied, finalize the session using the "Finalize" button (CD symbol) in the target CD-View's tool bar.

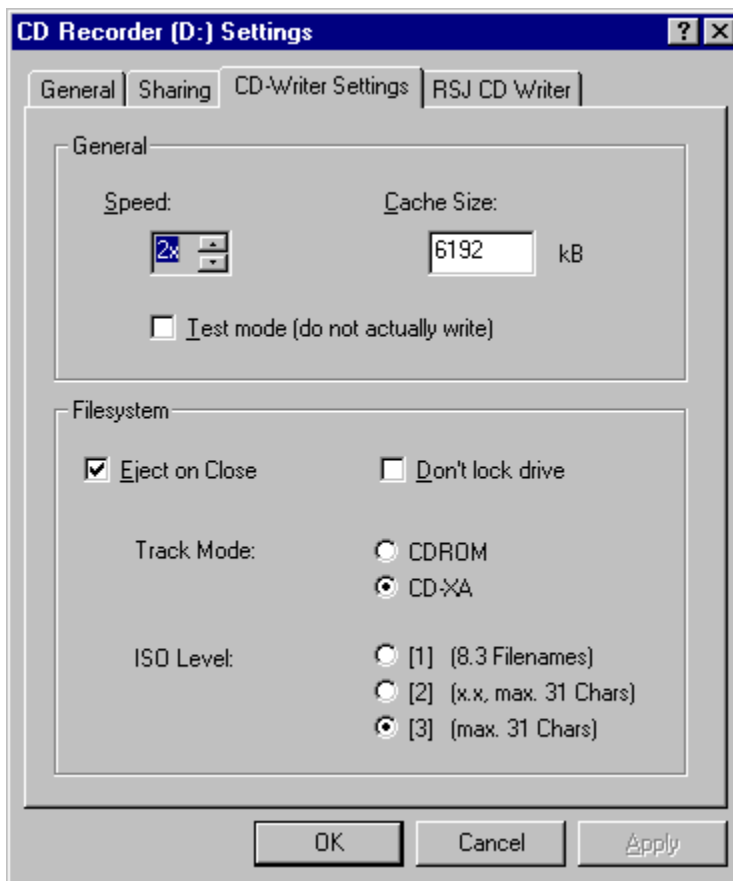
See chapter "CD-View" for more information.

Reference

Now that you have learned how to copy data and CD's using RSJ CD-Writer, we will now explain the various options and settings of our software.

File system settings

The RSJ CD-Writer file system is configured just like any other drive in Windows. Use the "Properties" command in the recorder's context menu to open this dialog:



Reference

RSJ CD-Writer inserts two new pages to this dialog:

- CD-Writer settings
- CD-Writer Info

The individual settings are:

General

Speed	Use the arrow buttons to adjust the recording speed (1x means 150K/sec, 2x 300k/sec,...)
Cache-size	Size of the memory cache used by the RSJ CD-Writer file system
Test mode	Check this button to verify if the source device(s) delivers data fast enough for the selected recording speed. If this button is selected, the recorder does not write to the medium (but “pretends” to do so).

File system settings

Eject on close	Check this box to automatically eject the medium after the session is finalized. Kodak recorders need this option.
Don't lock drive	During the write process, the recorder door must not be opened since this might destroy the CD. If this option is not checked, the drive door is locked until the session is closed. Otherwise the door can be opened (i.e. by pressing the recorder's eject button) any time during the write process. Be cautious with this option.
Track Mode	Select desired track mode here (See: “Technical details”)
ISO Level	Chose the desired ISO level (See: “Track Modes”)

CD-View

The RSJ CD-Writer file system copies and processes data on a file basis. Since there are different CD formats and only the CD-ROM format provides files, the **CD-View** application was included in the CD-Writer product.

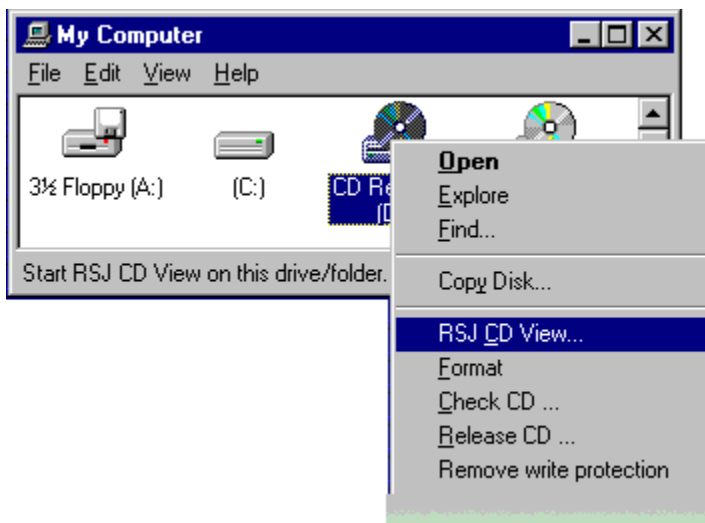
CDs store data in tracks; each CD can hold up to 99 tracks. While CD-ROMs usually contain only one track that contains all files (data), Audio CDs for example store each title in a single track.

CD-View processes data on a track basis no matter what they contain. It copies all kind of CDs in just a few steps.

Note: Although CD-View and the CD-Writer file system come in a single package, CD-View has to be considered a separate product. That means, a CD that was written to with the file system cannot be used with CD-View and vice versa.

Start CD-View

There are two ways to start *CD-View*: Use the “RSJ CD-View” entry in the device’s context menu or the command prompt (DOS window).



CD-View

Start from the context menu

Open “My Computer” on your desktop or Explorer, choose the desired drive, open the context menu with the right mouse button and select “RSJ CD-View”.

Command line start for CD-ROM or CD-Recorder

In order to start *CD-View* for a CD-ROM drive or a CD-Recorder, the corresponding drive letter must be entered on the command line.

Example:

```
cdview e:
```

This example will start *CD-View* and shows the track directory of the CD-ROM inserted in drive E:

Hard disks (temporary storage)

For temporary track storage *CD-View* can also work with hard disks. *CD-View* simulates a CD recorder in hard disk sub folders and creates a single file for each track called *TRACKxx.TRK* or *TRACKxx.WAV* (xx is the track number from 01 - 99), respectively.

Note: The directory should not be altered with applications other than *CD-View*.

Data tracks are stored with the .TRK extension, while audio-tracks are stored with the .WAV extension. Audio-tracks can be played back with a Multimedia-Recorder, as far as the system is capable of playing audio data with 44,1KHz in 16-Bit Stereo.

Note: Do not use Window’s sound recorder to play back *CD-View*’s WAV files, since these files usually are very large. Sound recorder attempts to load the whole file into memory, which might cause the system to hang. Use Media Player instead.

Example:

```
cdview c:\rsjcdw95\tracks
```

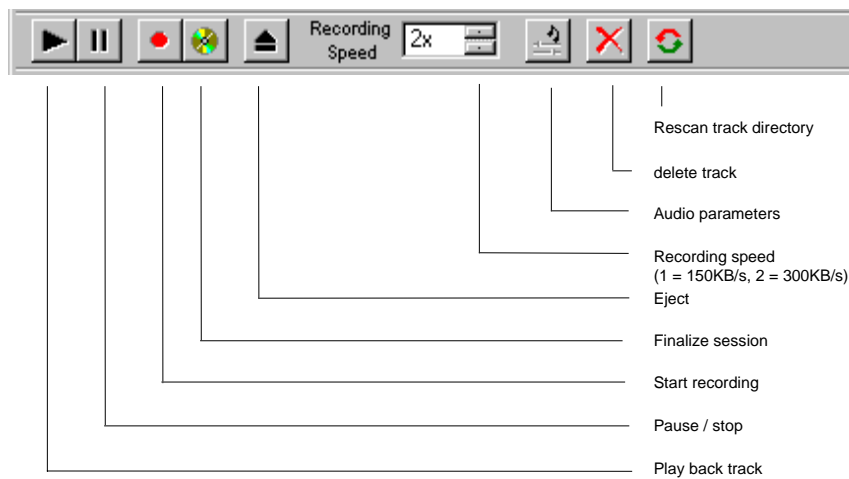
In this example *CD-View* will emulate a CD-Recorder in the directory *c:\rsjcdw95\tracks* and will store each track in files called *TRACKxx.TRK* or *TRACKxx.WAV*, respectively. Note that you must provide a full path including drive letter.

CD-View Interface

The *CD-View* user interface consists of a tool bar, a track list of the CD and a status bar.

Tool bar

The tool bar contains the following operating elements:



Play back track	Starts audio play back of the selected track. You need a sound card to play back tracks from hard disks or CD-ROM drives or recorders. However, most CD-ROM drives and recorders have a headphone connector that can be used as well.
Pause / stop play back	Pauses or resumes play back.
Start recording	Starts copy (record) process.
Finalize session	After all tracks have been copied, finalize the session with this button. Please note the information in chapter "Session"!
Eject	Opens the drive door.

CD-View

Recording speed	Adjusts the current recording speed. (1x means 150K/sec, 2x 300k/sec,...). Recording speed must not be too fast for the source device.
Delete track	Deletes all selected tracks.
Rescan track directory	Reads the table of contents of the inserted CD (i.e. after the CD was replaced). All entries of tracks that are prepared for copying will be erased (not physically, but from the list).
Audio parameters	Adjusts the starting and ending points of audio tracks being copied. These settings should only be changed if audio tracks are otherwise clipped at the beginning or end.

Whether these buttons actually are enabled depends on the capabilities of the device, the situation and the selection state of the tracks (i.e., the play back button is disabled if a data or no track is selected).

Note: There is also a context menu that appears if you click the right mouse button within the track list.

Track list

The track list shows each track on the CD with its name, type (Audio, CD-ROM or CD-XA) and the length in minutes and seconds and in Megabytes.

Above the track list the CD-title is displayed. If the CD has not yet been given a title, it says "unknown CD".

The icons on the left indicate the track type and its state. There are different icons for video, audio and data tracks. The icons are shaded if the corresponding track has not been copied yet.

The titles of each track can be edited by choosing the "Edit title" command in the track's context menu.

Status bar

The status bar displays general information about the CD inserted as well as the current status of the program.

Usually, the status line indicates the number of tracks, the space occupied by the tracks and the free space on the CD.

Eventual error messages are displayed here as well.

Copy WAV-files into Audio-tracks

CD-View can also write WAV-files from other programs into Audio-tracks on a CD. These files must have the following format:

- 16-Bit
- Stereo
- 44,1 KHz
- uncompressed

The WAV-file format is quite versatile and supports many features, including loops and compress. CD-View supports none of these additional features, so WAV files that are to be copied by CD-View must be in raw format, just like the ones created by, i.e., the Windows sound recorder.

Copy tracks

In order to copy one or more tracks, open a CD-View session for the target device and one for each source device.

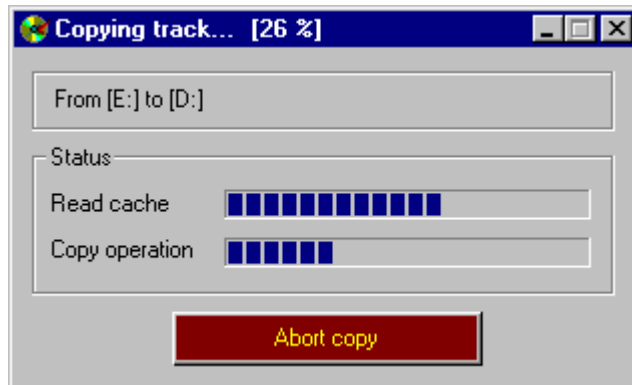
The tracks to be copied are selected and then dragged to the target's CD-View session using the left mouse button. The tracks will appear in the target window with their original name and receive a shaded track icon, indicating that the corresponding tracks have not yet been copied. The source column of the track list shows from which device the track will be copied.

Note: When tracks are dragged over the target CD-View, a gray line is displayed indicating where the dragged track(s) would be inserted. If this line is not displayed or the mouse pointer turns to a "no drop" sign, you attempted to either drop the files on a CD-ROM or before already copied tracks on a recorder. Once tracks are copied you cannot change their order anymore, nor can you place additional tracks before them.

After dropping the tracks on the target CD-View, change their order by simply picking them up and dropping them at the desired location.

Before pressing the "record" button, verify that the recording speed setting is not too fast for the source device(s).

After starting the copy process, a window appears where the copy status is displayed:



The window contains two progress indicators where the gap degree of the reading buffer and the progress of the copying process are displayed.

The reading buffer is needed to balance short-term reading delays and ensures a minimum reading speed while copying tracks. The reading buffer should have the following status:

<i>Track type</i>	<i>Source</i>	<i>Target</i>	<i>Full reading buffer</i>	<i>Low reading buffer</i>
Data-track	*	CD	While writing minimum speed is kept	Copying process must be truncated if necessary
Data-track	*	HD	Unimportant	Unimportant
Audio-track	HD	CD	While writing minimum speed is kept	Copying process must be truncated if necessary
Audio-Track	CD	HD	Fixed disk too slowly to store Audio data. Possible errors in Audio-files	While reading minimum speed is kept

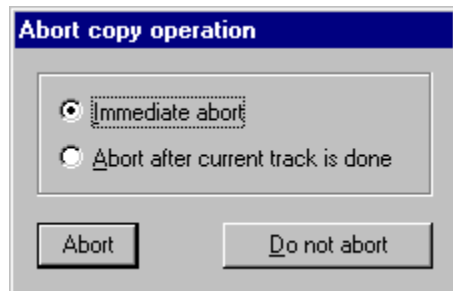
CD-View

Track type	Source	Target	Full reading buffer	Low reading buffer
Audio-Track	CD	CD	Audio data might not be read with the minimum speed; the copying process does not have to be truncated necessarily	While reading, the minimum speed is kept, but it may happen that the minimum speed cannot be kept while writing and therefore the copying process must be truncated

As this table shows, copying Audio-tracks from CD to CD (e.g. CD-ROM to the CD-Recorder) means the greatest risk: If both drives do not operate at the same speed, either the reading or writing speed cannot be kept. If the minimum speed while reading Audio-tracks cannot be observed, the copying process does not have to be truncated, but the Audio-data may have defects in the form of jumps or reruns.

Note: The CD-Recorders have an additional buffer storage, which sometimes is bigger than the reading buffer used by *CD-View*. In that case, the reading buffer will be emptied completely before copying and may, depending on the speed of the source drive, be refilled very slowly or not at all. Usually, this only happens when copying from CD-ROM drives to a CD-Recorder.

The copy process can always be aborted by pressing the “Abort copy” button”. This button displays the following dialog:



If you choose “Immediate abort”, the copy progress is aborted immediately. The current track on the target device will definitely be unusable.

The second option, “abort after current track is done”, ensures that the current track is not damaged and copied in its entirety.

Close session

After all tracks have been copied, the current session must be finalized to make the new CD readable for normal CD-ROM drives.

To do so, press the “Finalize session” button (CD icon) in the target’s CD-View session. This task may take a couple of minutes. However, to reduce finalizing time, you can adjust the speed setting to its maximum value, since this task does not depend on the source device.

Audio-tracks can only be played when they are within the first session.

Track size and space required

The size of a track is specified in two different units:

- Play back time of the track
- Length of the track in Megabytes

For Audio-tracks you may assume a size of approx. 10 MB per minute.

Technical details

This chapter describes the format of a CD. In fact, you do not need this knowledge in order to use the RSJ CD-Writer file system. However, you will get a deeper insight into the subject.

ISO9660

This standard of ISO (International Organization for Standardization) defines the method which should be used for storing data on a CD. The CD-Writer file system writes CDs using this standard, i.e. an operating system able to read CDs according to ISO9660-standard can read CDs created with RSJ CD-Writer.

Format of a CD

An ordinary CD-ROM consists of a track directory (TOC) and one or more tracks.

T O C	Track #1	Track #2	Track #3	Track #4	Track #5
-------------	----------	----------	----------	----------	----------

The track directory actually does not contain names or positions of the files stored on the CD, but the numbers and positions of the tracks (songs on Audio-CDs). The directory of the files is stored in one of these tracks.

Track

Data on CDs is stored in tracks. Each CD can contain up to 99 tracks. On Audio CDs, each title (song) is stored in a separate track.

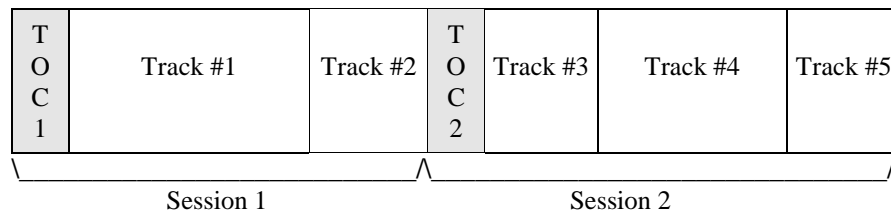
Actual CD-Recorders have to write a single track at once, without any breaks. So, if the input data stream is interrupted (even for a short time), the current track will be corrupted. That's why the CD-Writer file system collects as much data as possible before it starts "burning" the CD. Additionally, the CD Writer file system has to make sure that the files copied are stored in no more than 99 tracks. Therefore, the

Technical details

minimum cache size should not be less than 6144 kB (6 MB * 99 = 630 MB, a CDs capacity). Also, a file's data must not be split into two different tracks.

Multisession CDs

Since a storage area on a CD can only be written to once, a new table of contents (TOC) has to be written for each new session.



Each session has its own TOC. After closing a CD without finalizing the session the new data cannot be accessed from normal CD-ROM drives, because the new TOC was not written to the CD and the CD-ROM drive does not see the new track(s) (data).

The CD-Recorder, however, stores this information in an unused space in the previous TOC and therefore can access the new data.

Note: A session occupies approx. 12-20MB of space on the CD. So that's why a new session should only be closed if the CD should be accessible to normal CD-ROM drives.

Track mode

A track consists of sectors that contain 3234 bytes. 2352 bytes per sector can be used to store data, the rest is used for CD error correction.

Audio

Audio-tracks do not have any additional error correction. The entire sector is occupied by digitized music. For music data no error correction is needed, since data errors are not recognized by the listener.

Mode 1, Form 1

This is the original CD-ROM data format. 2048 of a sector's bytes are used for data; the rest is used for system information and error correction data.

This format can be read by all CD-ROM drives.

Mode 1, Form 2

This format lacks error correction data, so error correction is not provided. It allows 2336 bytes per sector.

This format is used by some (older) Multimedia applications.

Mode 2, Form 1

Similar to Mode 1, Form 1, though 8 unused bytes out of the error correction field are added to the system data at the beginning of the sectors. This format is used by Kodak Photo-CDs.

The RSJ CD-Writer also uses this format to guarantee that non-standard-conforming CD-ROM drives and drivers identify all sessions.

Mode 2, Form 2

Similar to Mode 1, Form 2. 2324 bytes of user data fit in one sector.

Note: This format can only be read by recent Photo-CD-compatible drives (all currently sold CD-ROM drives).

XA, Photo-CD, Multisession

XA

XA was launched by several companies to enable the simultaneous reading of image and sound data. This is achieved by storing data alternately. Because the sector formats of image and sound data differ, the more flexible Mode 2, Form 1 resp. 2 is used.

Photo-CD

Besides the additional data for CDI devices, a Photo-CD consists of single files that contain the image data. Generally, Photo-CDs differ from Writable-CDs only through their imprint.

Format Mode 2, Form 1 is used, so Photo-CDs cannot be read by older CD-ROM drives.

Warning: The RSJ CD-Writer file system accepts Photo-CDs as writable, but sealed and therefore write-protected CDs. By choosing “Remove write protection” in the recorders context menu this write protection can be removed, but the CD might become unusable for CDI-players. That’s why used Photo-CDs should not be written to with RSJ CD-Writer.

Multisession

Multisession CDs became common with the arise of Photo-CDs: each Photo-CD which is sent in a second time becomes a multisession CD.

Note: CD-Writer creates Multisession-CDs as well. Some CD-ROM drives are able to read the new Mode 2, Form 1 sector format, but not necessarily have to be able to read multisession CDs. These drives can only access the first session of multisession CDs.

Long file names

Long file name support is based on 2 different standards:

Rock Ridge Extensions

This standard is used to store long file names and Unix-attributes especially within the Unix-area. The RSJ CD-Writer file system (currently) supports file names up to approx. 160 characters. Generally, the file system writes predefined UNIX file attributes to the CD, so existing attributes are not used.

Please note that in UNIX environments upper and lowercase characters in file names are distinguished. When reading Unix-CDs with the RSJ CD-Writer file system, it may happen that a file cannot be opened if another file in the same directory has the same name, but different upper or lower case characters.

This standard is the basis of the RSJ CD-Writer file system and is used for reading and writing.

Joliet

This is the “Windows”-standard for long file names on CDs. It allows up to 64 characters per file name.

Generally, both standards are written to the CD. If a writable CD that already has been written to is reinserted, always the best possible standard is used to display directory and file names.

If CDs are to be accessed under DOS, either the ISO-level in the recorder’s settings dialog has to be set to “1” (8.3-names) or their must not be any file names that violate the 8.3 file name convention.

Tips and tricks

In this section we would like to provide answers and solutions to some known problems. Please read this chapter before contacting your dealer or our customer support.

Inexplicable mistakes or crashes

- Some SCSI-adapters require you to make sure they do not start with synchronous transfer. The corresponding option usually contains the words “Sync Transfer” and can be accessed – depending on the adapter – either by some setup utility program (e.g. press Ctrl+A during system boot for Adaptec adapters) or by setting jumpers. If your SCSI-adapter provides such an option, you should definitely disable it.
- Perhaps there is a memory fault. Usually a memory fault is not recognized at all (no Parity Bit) or signaled through a complete system crash. If you are not absolutely sure that the installed memory is o.k., set the memory access speed in the BIOS setup to its minimum value and try again. If it seems ok now, the memory in your system is either of poor quality or defect. Disabling the 2nd level cache in the BIOS setup might be helpful for testing, too.
- Sometimes the latest SCSI host adapter driver solves it.

After changing the cache size, the writing process is aborted with an error message.

The maximum cache size mainly depends on the memory (RAM) installed. If the Cache size exceeds free memory, space must be made available by swapping other programs and data to the hard disk. This reduces CD-Writers performance and reliability. If the cache size is way too large, the memory cannot be made available at all and the writing process will be aborted with an error message.

Tips and tricks

Self-written CDs cannot be read by some CD-ROM drives

Unfortunately, there is no general solution. The CD-ROM drives have to be able to recognize multiple sessions and read CD-XA-tracks. Sometimes certain CD recorder and CD-ROM drive combinations cause problems. For example, a NEC 6-speed CD-ROM drive CDR502 cannot read CDs written with Yamaha's CDR100E. There still are combinations which cause problems – in these cases, “try and error” is the only help.

In rare cases CD-ROM drives cannot cope with more than approx. 80 tracks; then raise the cache size to reduce the number of tracks.

Sometimes my CD-ROM drive cannot identify all sessions. But it should be multi-session capable (at least according to producer's specification)

Although there is no limit for the maximum number of sessions on a CD, it seems that more than 10 sessions might not be managed by some CD-ROM drives. In that case the only solution is to copy the CD from the Recorder to a hard disk and then back to a new CD (with one single session).

While copying the last Audio track sometimes an error message appears. The Audio track, however, seems ok.

The end of the last Audio track cannot be determined exactly on some CDs. We watch this problem and will, if necessary, suppress the error message in a future version. The CD produced is entirely o.k., so this error message can be ignored.

Error solutions

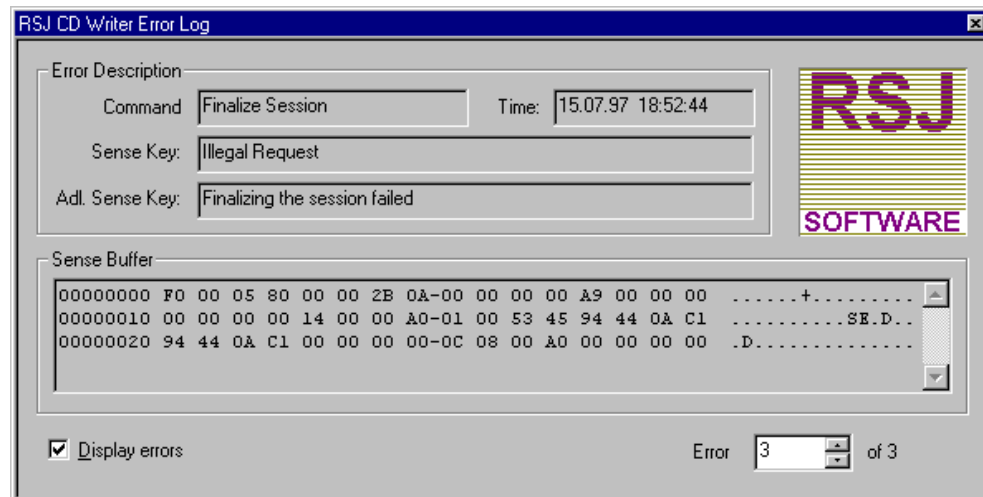
This chapter will assist you in correcting problems which may arise using the CD-Writer file system.

CDWPOPUP

All CD-Recorder bugs are recorded by the program “cdwpopup” and dumped on the screen. This information is essential if you contact customer support, so the program should not be terminated.

Note: A defective CD should not be inserted into the CD-Recorder; already closed sessions can be read by CD-ROM drives anyway.

Cdwpopup only reports errors returned by the CD recorder. File system errors are returned and processed with standard Windows error codes.



Error solutions

Table of errors

The following table contains the most important errors that might be reported by *CDWPOPUP*.

<i>Sense Key</i>	<i>Adl. Sense Key</i>	<i>Cause/Correction</i>
Illegal Request	Invalid Block Address	The CD and the file system do have a different status. Release CD with "Emergency eject" command.
Medium Error	Unable to read PMA, TOC or sub code	The CD is either damaged or dirty. If cleaning does not solve the problem the CD must be replaced.
Medium Error	Absorption Control Error	The track could not be written correctly. In general, this error arises after the CD was removed improperly and replaced by another CD. A system reboot without closing the CD might cause this error, too. The CD is defective and must be replaced.
Hardware Error	*	The CD-Recorder has located an internal error. Remove the CD with "emergency eject", switch off and reactivate the recorder and try again. If the error persists, the Recorder needs service.
Unit Attention	*	The CD was manually replaced (drive door not locked) or the external recorder was turned off and back on by accident. To avoid loss of data, use the "Emergency eject" command.

Other errors

Error solutions

The following table contains a list of errors which cannot be assigned to a special command. Especially an incorrect configuration may cause these errors.

<i>Errors</i>	<i>Cause/Correction</i>
CD with writing protection	<ul style="list-style-type: none">• CD-ROM is inserted. Only writable CDs can be written to. You may recognize writable CDs by their golden (sometimes greenish gleaming) color.• The CD has not been formatted.• There are too many tracks on the CD. This can be checked with the “Check CD” command.• The CD is full.• The CD was released with the “Close with write protection” command.
Drive cannot be attached	<ul style="list-style-type: none">• The drive is not ready (no CD, switched off, bad connection).• Drive was turned off or not connected during system boot.• The drive is defective.
Drive cannot be closed	An error occurred during the write process. If closing the CD does not work even after a second try, the CD must be released using the “Emergency eject” command. The CD might be unusable.
Session cannot be closed	<ul style="list-style-type: none">• The CD is either defective or dirty.• The SCSI adapter uses synchronous transfer mode (See chapter <i>Tips and Tricks</i>)

System requirements

This chapter lists the hard- and software requirements for RSJ CD-Writer.

Hardware

The following hardware requirements must be met:

- IBM compatible PC with 80486-processor or better
- min. 16MB RAM
- SCSI host adapter
- CD-Recorder

The appendix shows a list of supported CD recorders.

Software

The following software requirements must be met:

- Windows 95
- SCSI host adapter driver support

CD-ROM

Generally, CDs created by the RSJ CD-Writer file system can be read by all current CD-ROM drives.

The following restrictions apply:

- You need a multi session CD-ROM drive to read CDs with more than one session.
- Also verify that the driver software used supports multiple sessions (e.g. MSCDEX.EXE).

Appendix

The appendix contains general information and specifications concerning RSJ CD-Writer.

Supported hardware

The following list describes the hardware supported by the RSJ CD-Writer file system.

Note: If your recorder is not in this list, check our web site at <http://www.rsj.de> or contact us for an updated hardware list.

CD-Recorder

The following CD recorders currently are supported:

<i>Producer</i>	<i>Model</i>	<i>Speed</i>
Kodak	PCD225	2/2
Kodak	PCD200	2/2
Philips	CDD521	2/2
Philips	CDD522	2/2
Philips	CDD2000	2/4
Yamaha	CDR100	4/4
Yamaha	CDR102	2/4
HP	SureStore 4020i	2/4
Grundig	CDR...(constructional like CDD2000)	2/4
Plasmon	CDR42...(constructional like CDD2000)	2/4
Pioneer	DW-S114x	4/4
Sony	CDU920S	2/2

Appendix

<i>Producer</i>	<i>Model</i>	<i>Speed</i>
Sony	CDU924S	2/4
Sony	CDU926S	2/6
Philips	CDD2600	2/6
HP	CD-Writer 6020	2/6

Note: *Yamaha*-Recorders can only read tracks completely if the session has been closed. Therefore, a CD should never be released without finalizing its session.

Sony recorders do not support test mode.

Restrictions

In the current version the following restrictions apply:

- Only one file may be open for write access at a time.

Mastering

The RSJ CD-Writer file system was not designed for mass production of CDs. Application examples are, among other things, filing of data, production of application specific CDs, the use of CDs as transfer medium (e.g. DTP) and the production of prototypes.

If you want to create a master CD, we recommend to point out to the CD-producer that a new CD should be created that contains all data in one single track. Otherwise the photo CD-similar format of the CD-Writer CDs might cause problems creating or using the glass master (several tracks, more than one session, etc...).

Conditions of use

- 1) The product contains data processing programs and their documentation. We would like to point out that at the current state of technology it is not possible to develop data processing programs which work totally free of errors in all environments (especially if they work with other programs).
- 2) Object of this contract is, however, a data processing program which is fundamentally useful as an application. The responsibility for choice, installation and use as well as the results intended exclusively bears the purchaser.
- 3) The program may be used with or in connection with only one single machine. If the programs are altered or connected with other programs, they may also be used only on one machine.
- 4) The delivered, altered or linked programs may be copied in machine-readable or printed style if the copy serves as a backup or to alter the program. 3 also applies to copies.
- 5) The program contains a Copyright note. This note must be adopted in every single copy, every altered version and every part of the program which is connected with another program.
- 6) Other usage of the product is not allowed.
- 7) If you export the program, the export regulations of the Federal Republic of Germany must be observed.
- 8) The purchaser may assign his license to a third party in the extent and restrictions of the above mentioned regulations. With the assignment the person assigning loses all rights of use for the original, all copies, altered versions and connections.

Index

A

Audio	25
Audio parameters.....	18

C

Cache-size.....	14
CDD2000.....	34
CDD2600.....	35
CDD521.....	34
CDD522.....	34
CDR100.....	34
CDR102.....	34
CDU920S	34
CDU924S	34
CDU926S	34
CD-View3, 11, 12, 15, 16, 17, 19, 21	
CDWPOPUP	30
CD-Writer 6020.....	35
Close session	21
context menu.....	8, 11
Context menu.....	12, 15
Copy Audio-CDs	11
Copy data-CDs.....	12
Copying process.....	20, 21

D

delete track.....	18
device manager	6, 7
Don't lock drive	14
drive letter.....	3
DW-S114x	34

E

Eject.....	17
------------	----

Eject on close	14
Emergency eject.....	10

F

Finalize.....	9
Finalize session	17
Finalize Session.....	9
format	8

G

Glass master	35
Grundig	34

H

HP	34
----------	----

I

ISO Level	14
ISO9660	23

J

Joliet	27
---------------------	----

K

Kodak.....	34
------------	----

L

Long file names	27
------------------------------	----

M

Mastering	35
Mode 1	25
Mode 2	25

Index

Multisession 24, 25, 26

P

Pause 17

PCD200..... 34

PCD225..... 34

Philips 34

Photo-CD..... 25

Pioneer 34

Plasmon..... 34

Play back..... 17

R

Recording..... 17

Recording key 11

recording speed 17

Rescan track directory..... 18

resume 17

Rock Ridge Extensions 27

S

Sony 34

Speed..... 14, 17, 19, 20, 21

Status bar 18

Stop 17

SureStore 4020i 34

System requirements 33

T

Table of errors 31

Temporary close without Session . 10

Test mode 14

Track11, 16, 17, 18, 19, 20, 21, 22,
23, 24, 29, 32, 35

Track list 18

Track mode 25

Track Mode 14

W

write protection..... 9

X

XA..... 25

Y

Yamaha..... 34