

Cutting Master Converter User Manual

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SONY Corporation

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List of changes

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1. Introduction

1.1. Scope

This document describes the usage of the Cutting Master Converter application (CM Converter).

1.2. Definitions and References

| | |
|---------------------|---|
| AIT | Advanced Intelligent Tape. See www.aittape.com . |
| AIT-1 | The first generation of AIT |
| CM | Cutting Master |
| Cutting Master | A medium that contains cutting information of disc |
| DL | Dual Layer Disc |
| DLT | Quantum DLTtape™. See www.quantum.com . |
| HL | Hybrid Layer Disc |
| L0 | Layer 0 |
| L1 | Layer 1 |
| Philips CM | Cutting master format designed by Philips. Philips CM shall be stored in DLT or AIT tape medium. One tape medium corresponds to one layer information. Refer to “Modification to DDP (CMF) for SACD mastering”, Philips Electronics Netherland B.V. |
| SA-CD | Super Audio CD |
| SA-CD CM (SONY) | De-facto standard of the first generation cutting master format of SA-CD. Also known as “SONY CM”. SA-CD CM (SONY) shall be stored in AIT-1 tape medium. One tape medium corresponds to one layer information. Refer to “Super Audio CD Cutting Master Specification”, Sony Corporation |
| SA-CD UCMF | “Unified” cutting master format for SA-CD, released in November 2004 as a replacement of the first generation CM. Refer to “Super Audio CD Unified CMF”, Royal Philips Electronics |
| Scarlet Book | Refer to “Super Audio CD System Description”, Royal Philips Electronics and Sony Corporation |
| SL | Single Layer Disc |
| SONY CM | SA-CD CM (SONY) |
| SONY Disc Image HDD | A SCSI hard disk drive used as a storage of intermediate data in Sony Authoring System |
| SONY TMP files | Temporary files that are stored in file system by this application. See Chapter 6 for details |

Super Audio CD A disc specified by Scarlet Book

1.3. Main Features

The CM Converter converts the cutting master medium of a certain format to the other medium.

It also compares the data of the two cutting master media.

Cutting masters for Dual Layer Disc are also supported.

1.3.1. Supported Input CM Format

- SA-CD CM (SONY) tape *1
- SA-CD UCMF files
- Philips CM (AIT/DLT) tape
- SONY TMP files
- SONY Disc Image HDD

1.3.2. Supported Output CM Format

- SA-CD UCMF files
- SA-CD CM (SONY) tape *1
- SONY TMP files

*1 Direct conversion from SA-CD CM (SONY) tape to SA-CD CM (SONY) tape is not supported.

1.4. Requirements and Recommendations

Before installation, make sure that the following requirements/recommendations are satisfied.

1.4.1. Hardware requirements

- IBM PC/AT compatible computer

1.4.2. Hardware recommendations

- File system with 4 to 9GB free space *2
- SCSI host adapter (for AIT / DLT tape media)
- AIT drive
- DLT drive (optional)

*2 Free space is used when CM is stored as files.

1.4.3. Software requirements

- Microsoft Windows NT/2000 Professional/XP Professional
- Internet Explorer 5.5 or higher *3
- [MSXML 3.0](#) or higher (It is not needed for Internet Explorer 6.0 or higher) *3 *4

*3 Internet Explorer and MSXML are needed when the user browses the log history.

*4 MSXML 3.0 can be downloaded from Microsoft website:

<http://www.microsoft.com/downloads/details.aspx?familyid=c0f86022-2d4c-4162-8fb8-66bfc12f32b0>

1.5. Copyright and Exclusion of warranty

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2. Getting Started

2.1. Installation (first time only)

There is no special installer application with this software. Copy all files in the package to a certain directory in hard disk.

Note: ASPI (Advanced SCSI Programming Interface) is not required to run this application.

2.2. Application startup

Double-click the icon of CuttingMasterConverter.exe.



Figure 2-1 Icon of CuttingMasterConverter.exe

2.3. Selecting Operation

Select one operation from the pull-down menu in the center of the Main Window.

- **Convert & Compare:** the content of the first master is copied to the second master and then the contents of the two masters are compared.
- **Convert only:** the content of the first master is copied to the second master.
- **Compare only:** the two contents of the first master and the second master are compared.

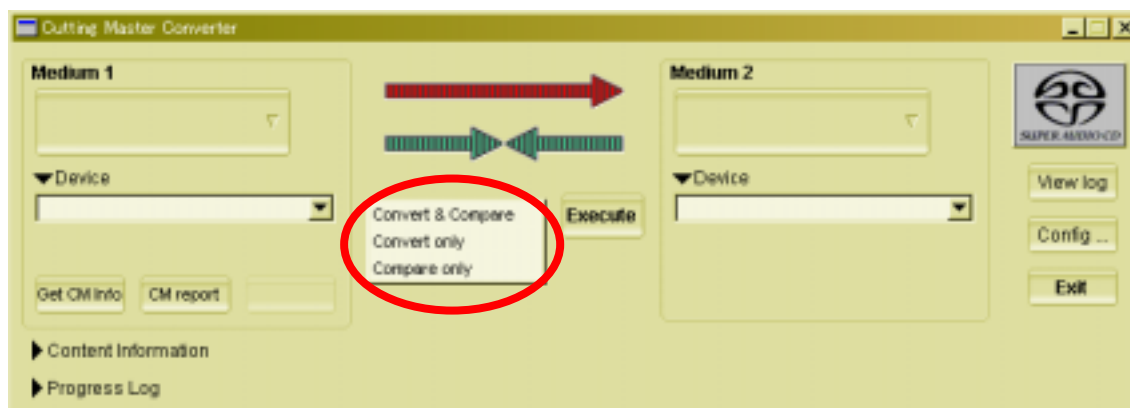


Figure 2-2 Selecting Operation

2.4. Selecting the first master

Select the first master. In case of conversion, the first master will only be read. In case of comparison, the first master will only be read.

2.4.1. Selecting the medium of the first master

Select the medium from the pull-down menu.

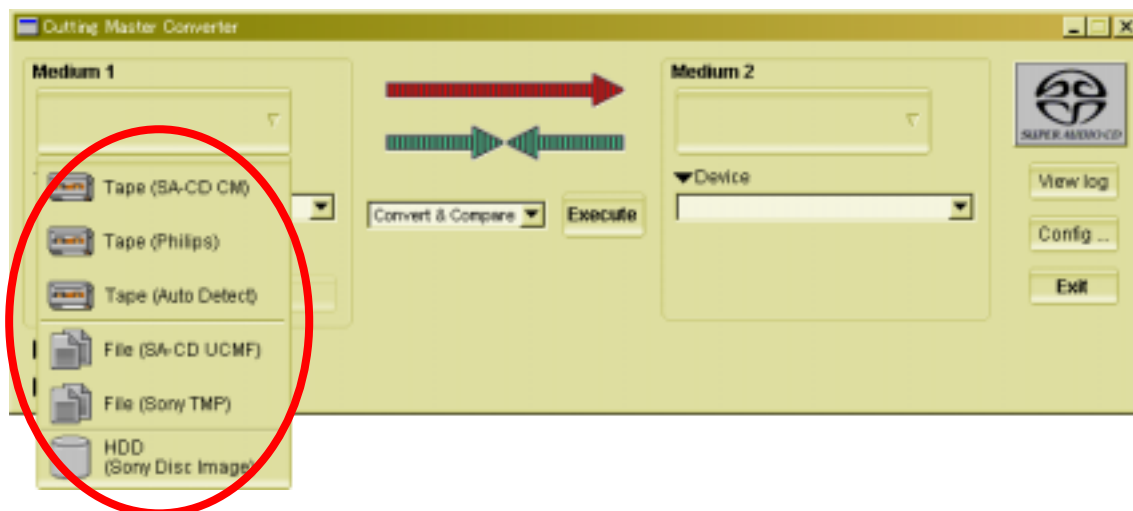


Figure 2-3 Setting the medium type of the first master

2.4.1.1. Tape (SA-CD CM)

Select this if the medium is SA-CD (SONY) CM tape. The menu item can be grayed and not selectable if there is no tape device detected.

2.4.1.2. Tape (Philips)

Select this if the medium is Philips CM tape. The menu item can be grayed and not selectable if there is no tape device detected.

2.4.1.3. Tape (Auto Detect)

Selecting this tries sequentially regarding the tape as one of known medium types. The menu item can be grayed and not selectable if there is no tape device detected.

2.4.1.4. File (SA-CD UCMF)

Select this if the medium is SA-CD UCMF file.

2.4.1.5. File (Sony TMP)

Select this if the medium is SONY TMP files.

2.4.1.6. HDD (Sony Disc Image)

Select this if the medium is SONY Disc Image HDD. The menu item is disabled by default. To enable this, see chapter 3.3.

2.4.2. Selecting the device/directory of the first master

Select the device from the pull-down menu if the medium is tape or hard disk drive. Select the directory if the medium is file.

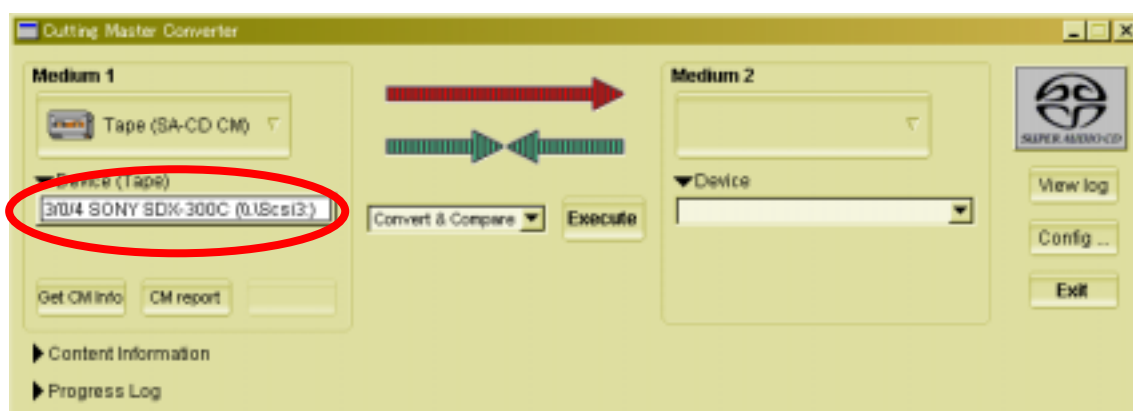


Figure 2-4 Selecting the device/directory of the first master

2.5. Selecting the second master

Select the second master. In case of conversion, the second master will be written. In case of comparison, the second master will only be read. In case of conversion and comparison, the second master will be written and then read.

Select the medium and the device/directory like the first master.

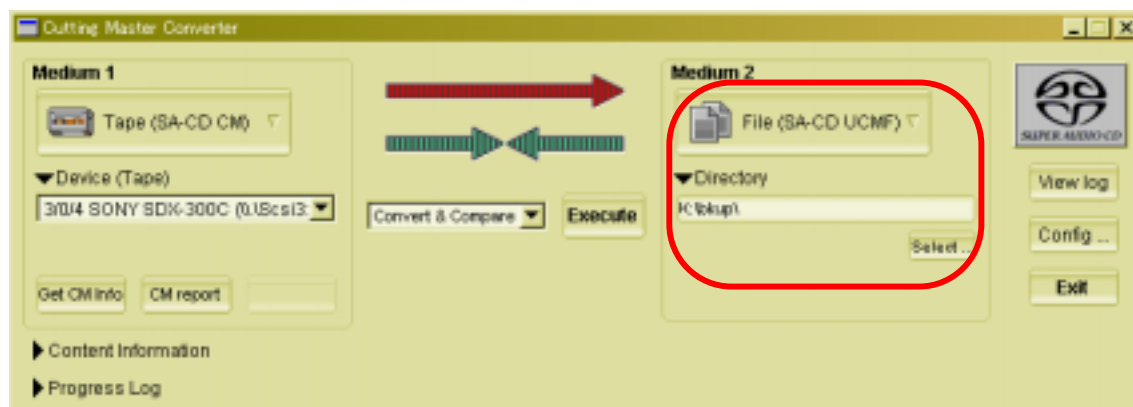


Figure 2-5 Selecting the medium and device/directory of the second master

2.6. Starting Operation

Click the Execute button and the operation starts.

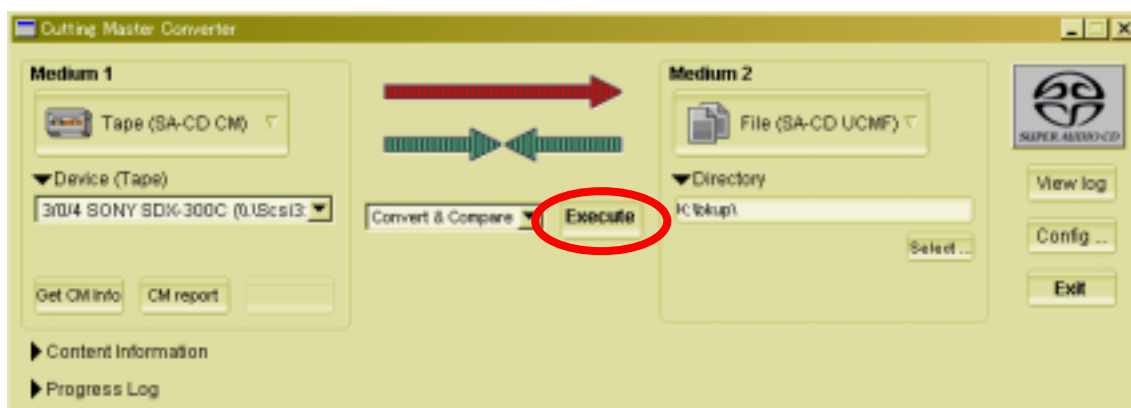


Figure 2-6 Starting Operation

2.7. Operation Progress

While the operation is in progress, the Progress Dialog appears. Click Cancel button to abort the operation.

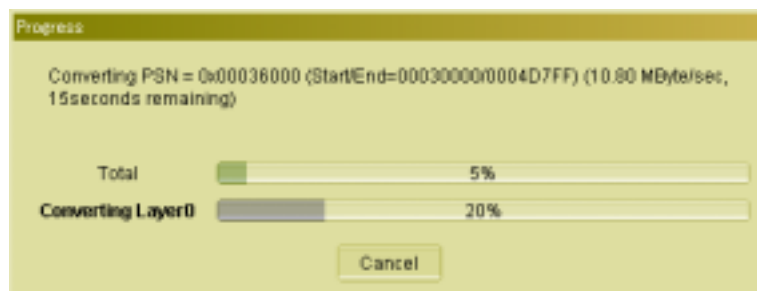


Figure 2-7 Progress Dialog

Note: User may be asked to insert the tapes in the beginning (Layer0) or middle (Layer1) of operation.

2.8. Getting the Result

If the user does not stop the operation, user receives one of the three results:

- Operation completed (Chapter 2.8.1)
- Operation completed, but one or more Warnings/Notices found (Chapter 2.8.2)
- Operation not completed because of error (Chapter 2.8.3)

The result is displayed in the Result Dialog and stored in the log.

2.8.1. Operation completed

This means that the operation is completed without any error. An example of the Result Dialog is shown in the Figure 2-8.



Figure 2-8 Operation completed

2.8.2. Operation completed, but one or more Warnings/Notices found

This means that the operation is completed, but there is some information that user should confirm whether they are okay or not. An example of the Result Dialog is given in the Figure 2-9.

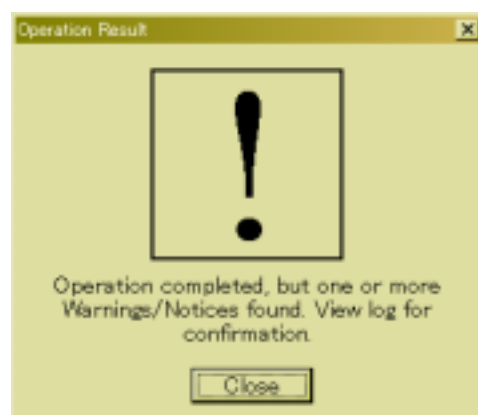


Figure 2-9 Operation completed, but one or more Warnings/Notices found

After closing the Result Dialog, user should click the "View log" button and see the Log Window. In the Log Window user can confirm whole messages. An example is shown in the Figure 2-10.

The typical warnings and notices are listed in Chapter 5.

Figure 2-10 Example of confirming the Warning/Notice messages

2.8.3. Operation not completed because of error

This means that the operation is not completed because of some errors. An example of the Result Dialog is shown in the Figure 2-11.

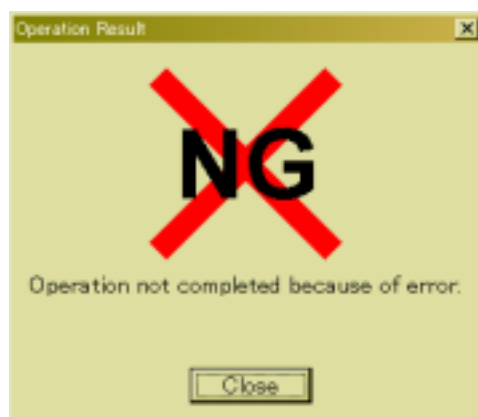


Figure 2-11 Operation not completed because of error

User may confirm the reason by checking the Log Window. See also the previous chapter.

3. Advanced Function

3.1. Getting CM information

Brief CM information of the first master is displayed by clicking the “Get CM info” button.

Note: This function is not implemented for the tape medium.

3.2. Printing CM report

If Sony Authoring System is installed in the same PC, CM report of the first master can be printed from this application.

- Input the path of cmreport.exe in the configuration dialog.
- Click the “Get CM info” button.
- Click the “CM report” button.

Note: This function is not implemented for the tape medium.

3.3. Using SONY Disc Image HDD

By enabling Sony Disc Image HDD import in the configuration dialog, HDD (Sony Disc Image) menu is turned to active.

4. Log message format

4.1. Log Level

According to the importance of log messages, each log entry is categorized and colored to five levels.

1. **Error Level**

2. **Warning Level**

3. **Notice Level**

4. **Information Level**

5. **Debug Level**

The messages of **Error Level** indicate that the operation cannot be completed by certain reasons.

The messages of **Warning Level** and **Notice Level** indicate that some important things notices for user to confirm what they are and whether they are ignorable or not.

The messages of **Information Level** mainly indicate the progress of operation and the other informational message. They can be safely ignored.

The messages of **Debug Level** indicate the detailed progress and information about the ongoing operation. They can be safely ignored.

4.2. Log File

Log messages are stored in the file "cmconv_log.xml" in XML format.

The file "cmconv_logview.html" is a HTML file to browse XML log file using javascript.

The Cutting Master Converter application opens the file "cmconv_logview.html" when the "View log" button is clicked.

Note: The files cmconv_log.xml.0, cmconv_log.xml.1, ... are the rotated backup files.

5. Troubleshooting

5.1. Warning/Notice list

There is a list of Warning/Notice messages shown in the log. User should confirm whether they are okay or not one by one when any of these messages are appeared.

5.1.1. No Tape device found.

This message is shown at the startup of the application when no tape device is found.

5.1.2. It took XX seconds to transfer 1024 sectors (PSN=YYYYYY-ZZZZZZ) ...

This warning message is shown when the transfer of data seems too slow (in case the rate is less than 0.2Mbyte/sec). Mostly the cause is difficulty of reading data from tape. It is recommended that user make the other tape as backup of the original tape as soon as possible, since the next time the tape may become unreadable.

5.1.3. Unknown file XXX skipped.

This notice message is shown when the Philips CM contains one or more unrecognized file(s). It is probable that the format of the tape is very old or unknown.

5.1.4. First File is XXX, which should be DDVID.DAT.

This notice message is shown when the name of the first file in the Philips CM is not equal to "DDVID.DAT". It is probable that the format of the tape is very old.

5.1.5. The name of image file is XXX, which should be IMAGE.DAT.

This notice message is shown when the name of image file in the Philips CM is not equal to "IMAGE.DAT". It is probable that the format of the tape is old. Unfortunately, some Philips CM tapes have the image file named "MAIN.DAT" and this message is frequently shown. The CM Converter application recognizes the image file even if the name is not correct, so in most cases this message does no harm.

5.1.6. The last FileMark not found. (XXXXXXXXXX)

This notice message is shown when the last file mark is not recorded in the Philips CM tape. Unfortunately, some Philips CM tapes do not have the last file mark and this message is frequently shown. The last file mark does not have strong meaning, so in most cases this message does no harm.

5.1.7. Contents of ANSI Label XXXXX (file name = YYYYYY) was not exactly

correct.

This notice message is shown when the ANSI Label in SA-CD CM (SONY) is not written in valid format. It is probable that the format of the tape is very old. The ANSI Labels do not contain important information, and this message does no harm in most cases.

5.1.8. The field "Format Level" in DVDID.DAT was "XXX", which shall be "1".

5.1.9. The field "DVD Data Sector Size" in DVDID.DAT was "XXX", which shall be "2064".

5.1.10. The field "DVD Image File Format" in DVDID.DAT was "XXX", which shall be "ID/IED/RESERVED/EDC".

5.1.11. The field "Encryption" in DVDID.DAT was "XXX", which shall be "NOENCRYP".

5.1.12. The field CPS System Type/AC Key/Region Code/Number of VTS in DVDID.DAT was XXXX, which shall be "00/00/00/01".

These notice messages are shown when there are invalid data in a certain field in SA-CD CM (SONY) tape. It is probably the bug of the creator application of the tape. The creator application of the tape should be debugged. It is recommended that user should convert the original tape to a new SA-CD CM (SONY) tape by using this application. The original tape should not be used as a master.

5.1.13. The field "Control Data" in DVDID.DAT, except the first 16bytes, shall be filled by 0x00.

This notice message is shown when the tape has non-zero data in SA-CD CM (SONY) tape, where zero data shall be filled. It is probably the bug of the creator application of the tape. The creator application of the tape should be debugged. It is recommended that user should convert the original tape to a new SA-CD CM (SONY) tape by using this application. The original tape should not be used as a master.

5.1.14. The padding data in the end of sector image was not filled by 0x00.

This notice message is shown when there are non-zero data in the padding data in the end of sector image in SA-CD CM (SONY) tape, where zero data shall be filled. It is probably the bug of the creator application of the tape. Although the padding data is not meaningful information, the creator application of the tape should be debugged.

6. Annex A: SONY TMP Files format

There are three files stored in SONY TMP Files directory in this version of application.

The file “ctrl.toc” contains the control information of the disc image and the length of this file is always 16 bytes.

The file “encr.toc” contains the encryption information of the disc image. The length of this file is multiple of 16 bytes.

The file “image.dat” contains the main data of the disc image in 2048 bytes/sector format. Both the data of Layer0 and Layer1 are stored in one file.

NOTE: The format of SONY TMP Files may be changed and may have incompatibility between versions of the application in the future. It means that user should **not** use SONY TMP Files as archive format of cutting masters.