



CD-R/RW DRIVE SW-224

User's Guide

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules.

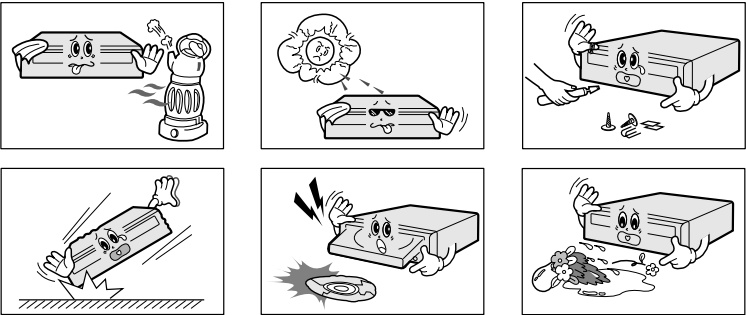
These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Safety Precautions

The following diagrams illustrate the precautions to be taken when using your CD-R/RW drive.



★ Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

You must not use the drive in any manner other than that specified in this guide.

CAUTION Do not attempt to repair the CD-R/RW drive yourself. Contact your dealer or local SAMSUNG representative for all repairs. If you make any adjustments or perform any operations other than those specified in this guide, you run the risk of exposure to hazardous radiation.

Avoid exposing your eyes or skin to direct or scattered radiation.

WARRANTY Please refer to the Samsung limited warranty statements.

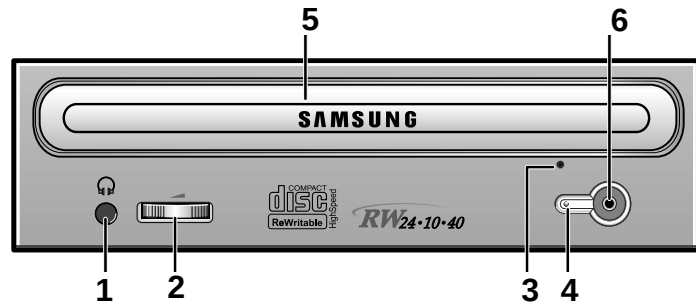
- Precautions**
1. To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.
 2. Always check each disc for cracks before using it. If there are cracks on the surfaces, especially around the border of the center hole, we recommend that you make a copy of the disc immediately and then stop using it. If you continue using the disc, it will probably develop more cracks and eventually cause irreparable damage.
 3. Do not use poor quality discs:
 - From unknown sources
 - Without any copyright
 - Scratched or damaged in any way

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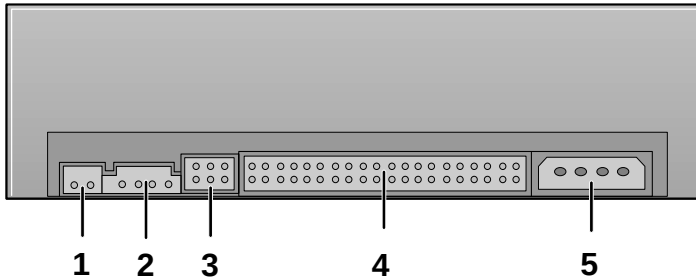
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* All product names mentioned in this document are trademarks or registered trademarks of their respective owners.

Your CD-R/RW Drive



1. Connector for stereo headphones with a 3.6 mm stereo mini-jack
2. Headphone volume control
3. Emergency eject hole (if the compartment does not open when you press the Eject button, power off the computer, insert a pin or unfolded paper clip in the hole and push firmly)
4. Indicator light (when it is green, a disc is being read or recorded)
5. Disc compartment (the compartment opens and closes automatically when you press the Eject button)
6. Eject button



1. Two-pin digital audio output terminal for use with a sound or MPEG card supporting digital audio features
2. Four-pin sound output terminal for use with a sound card (refer to the sound card documentation for further details)
3. Master/slave select terminal
4. Forty-pin host E-IDE interface connector
5. Four-pin power terminal

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Upgrading the Firmware Flash Memory

The product firmware can be upgraded by downloading the updated file from the following Web site:

<http://www.samsungelectronics.com>

System Requirements

Before you install the CD-R/RW drive, we strongly recommend that you check that your setup meets the system requirements listed below.

Item	Description
Computer	Intel Pentium II (or higher), 32 MB of RAM (or higher) with an E-IDE interface
Disk space	700 MB minimum
Windows version	Windows 95 / 98 OSR2 / 2000 / ME or Windows NT 4.0 (or higher)



General DMA Installation Guide Windows 95/98/Me : Jan 2001

Important!

Please read the entire DMA installation guide before installing your CD-R/RW drive.

About DMA Installation

For stable writing performance at high speeds, Installation of DMA transfer mode for E-IDE/ATAPI interface is strongly recommended. Especially for writing at 12x speed, DMA installation should be set to enabled on your PC system instead of PIO transfer mode. If DMA is not set to enabled on your PC, the data transfer may become too slow and resulting in data writing errors.

DMA Setting

Before you install your CD-R/RW drive, we recommend to set DMA to enabled on your PC system. See the following procedure to set DMA transfer mode in windows operating system. (Windows 95 OSR2/98/ME)

- Click on START
- Click on Settings
- Select Control Panel
- Select the System Icon
- Select the Device Manager panel in System Properties
- Expand the CD-ROM icon
- Select your CD-R/RW drive
- Click on the Properties button
- Click on the Settings tab
- Check the DMA checkbox to enables DMA.
- Click OK
- Restart your PC

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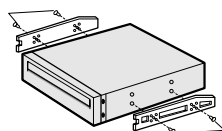
Installing the CD-R/RW Drive

To install your CD-R/RW drive in the PC, proceed as follows.

1 Make sure that the PC is powered off and disconnected from any power source.

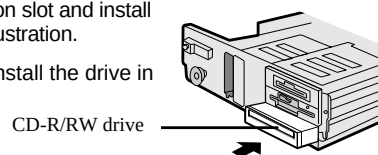
2 If necessary, attach a horizontal bracket to both sides of the drive.

- Use of the brackets depends on your computer model; you can purchase these accessories separately from your computer dealer.

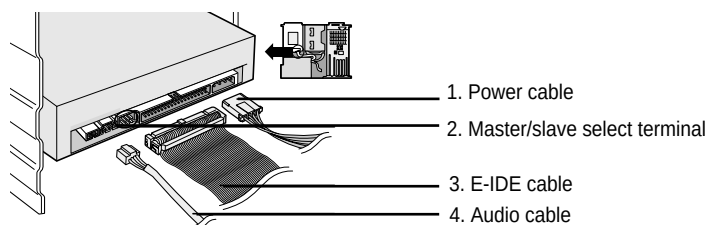


3 Remove the cover from a free expansion slot and install the CD-R/RW drive, as shown in the illustration.

- If you have no free expansion slot, install the drive in place of the diskette drive.



Connecting the Cables



1 Connecting the power cable

The 4-pin power cable from the internal power unit of your computer must be connected to the power terminal on the rear of the CD-R/RW drive.

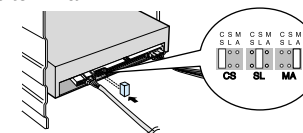
⑥

2 Installing a jumper on the master/slave select terminal

Install the jumper in the correct position on the terminal:

- MA to use the device in the master mode
- SL to use the device in the slave mode
- CS to control the device via a CSEL host interface signal

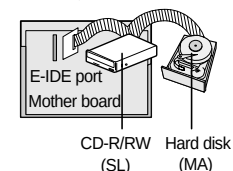
See Step 3 for further details.



3 Connecting the E-IDE cable

Two configurations are possible.

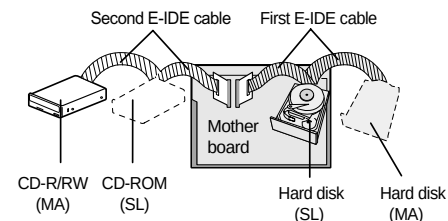
- The CD-R/RW drive is the only E-IDE device in addition to the hard disk.



Install the jumper in the SL position (Slave).

Connect the 40-pin flat E-IDE cable from the E-IDE port on the mother board, first to the CD-R/RW drive and then to the hard disk.

- You already have an additional E-IDE device installed in your computer.



Install the jumper in the MA position (Master).

Connect the 40-pin flat E-IDE cable from a second E-IDE port on the mother board directly to the CD-R/RW drive or first to another additional E-IDE drive and then to the CD-R/RW drive.

4 Connecting the audio cable from a sound card

- Connect the 4-pin audio cable between the sound output terminal on the CD-R/RW drive and the audio input terminal on the sound card.
- For clearer sound, use a digital output terminal.
(Available only for the CAID that supports digital output)
This may not be available for general sound cards.

⑦

Installing the CD Record Utility

To record data on a CD-R or CD-RW disc in the CD-R/RW drive, you must first install the CD record utility. For compatibility reasons, you are recommended to uninstall any existing software of the same type before installing this utility.

- 1 Insert the disc supplied with the CD-R/RW drive in the drive.
- 2 Follow the instructions displayed on the screen to install the utility. Refer to the separate utility documentation for further details.
- 3 Store the utility disc in a safe place.

Installing the Device Driver

No additional device driver is needed for Windows 95/98/2000/ME/NT4.0, as the default Windows device driver is used. You can check that the CD-R/RW drive has been correctly detected by Windows. To do so, proceed as follows.

- 1 Double-click on the **My Computer** icon on your desktop.
- 2 Double-click on the **Control Panel** folder.
- 3 Double-click on the **System** icon.
- 4 Click on the **Device Manager** tab.
- 5 Expand the **CD-ROM** branch.
The **SAMSUNG CD-R/RW SW - ***** device name is displayed.

The SAMSUNG device driver enables discs in the CD-R/RW drive to be read but not recorded in an MS-DOS environment; the driver is located in the D driver folder on the CD record utility disc.

Setting Up the Device Driver

◆ Automatic Setup

- 1 Insert the setup diskette in the diskette drive and change the directory to A:, where A: is the diskette drive.
To do so, type **A:** after the **C:** prompt and press **[Enter]**.
- 2 Type **CDSETUP** and press **[Enter]**.
- 3 Reboot the computer.

◆ Manual Setup

- 1 Make the **C:\SAMSUNG** directory.
- 2 Copy the files from the diskette to the **C:\SAMSUNG** directory.
To do so, type **COPY A:.* C:\SAMSUNG** after the **C:** prompt and press **[Enter]**.
- 3 Edit the **CONFIG.SYS** file.
Add the **DEVICE=C:\SAMSUNG\SSCDROM.SYS /D:SSCD000 /V** entry.

```
LAST DRIVE = Z
.....
DEVICE = C:\SAMSUNG\SSCDROM.SYS /D:SSCD000 /V
```

- 4 Edit the **AUTOEXEC.BAT** file.
Add the **C:\SAMSUNG\MSCDEX /D:SSCD000** entry.

```
.....
C:\SAMSUNG\MSCDEX /D:SSCD000
```

- 5 Reboot the computer.

Using the CD-R/RW Drive

To play audio or video CDs in your CD-R/RW drive, proceed as follows.

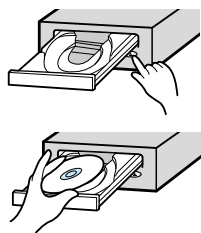
1 Push the power button and boot the computer.

2 After booting the computer, open the disc compartment by pressing the Eject button.

3 Insert the disc (CD) with the label on the disc facing upwards and close the disc compartment by pressing the Eject button.

The indicator light comes on.

4 Play the disc (CD).



Playing Audio CDs

Run the CD player supplied with Windows or your sound card. You can listen to the CD by connecting headphones to the appropriate connector. If you have installed the appropriate player, such as Microsoft Windows Media Player, you can adjust the volume using the headphone volume control on the drive front panel.

If you select DIGITAL at CD Audio Play in Media Player of Windows ME, the earphone does not appear in the Digital Mode.

Storing and Cleaning Your Discs

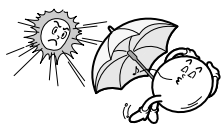
To ensure a long service life for your discs and drive, follow the precautions below when storing and cleaning your discs.

1 Do not place a disc in direct sunlight.

2 Store a disc vertically in a well-ventilated and stable location.

3 Do not write or attach a label on a disc.

4 Do not drop a disc or place heavy objects on it.



5 Do not touch the surface of a disc; hold it by the edges.



6 To clean a disc, polish lightly from the inside of the disc to the outside with a soft cotton cloth.



7 Do not leave the disc compartment open when you are not using it.

Solving Recording Problems

If you have any problems recording via your CD-R/RW drive, follow the appropriate instructions below for the source that you are using.

◆ Hard Drive

1 Check whether the source file is corrupted.

2 Optimize the hard disk by using the Windows defragmenter feature:

START / PROGRAMS / ACCESSORIES / SYSTEM TOOLS / DISC DEFRAGMENTER

3 Decompress the hard disk if it is compressed.

4 Make sure that the space available on the hard disk is at least twice the size of the largest file to be recorded on the disc.

5 If you wish to record more than 1 000 small files:

- First create an image file and copy the image file to the disc; refer to the section entitled "CD Creation from CD Image" in the CD record utility documentation
- Choose the low record speed
- Compress small files and then record them

◆ Network Drive

- 1 Copy the network drive contents to the hard disk and then from the hard disk to the CD-R/RW drive.

◆ CD-ROM Drive

- 1 Clean the source CD, if necessary.
- 2 Create an image file and then copy the image file to the CD-R/RW drive.
- 3 Check the CD-ROM drive record speed.

There are two recording methods :

- Low-speed (file by file)
- High-speed (transfer of an image file from the hard disk)

- 4 If the transfer speed of the CD-ROM drive is slower than the record speed, reduce the record speed.

◆ Others

- 1 Before starting to record, determine the audio and transfer speeds by using the **[Tool/System Test]** option in Easy CD Creator. Then, choose an appropriate record speed. If the audio speed is less than 2X, first create an image file on the hard disk.
- 2 To perform a record test before copying to a CD, select the **[Test/Copy]** option.
- 3 If the test fails, try recording on another disc.

- 4 Disable the PC's screen saver. If the screen saver activates while writing data, the data transfer may become too slow, resulting in data writing errors.
- 5 Close all application programs except writing software.
- 6 The CD-R/RW drive supports high-speed recording to High-speed CD-RW discs. Discs above CD-RW 8X use different rewriting methods and can only be via the CD-R/RW drive.
- 7 When viewing CD-RW 2X properties or performing a full erase, the "WRITE SPEED 4X DISPLAY" error is displayed unexpectedly. The CD-R/RW drive has been operating continuously for 20 minutes after completing the full erase.

Recommended Disc Types

CD-R	Fujifilm, Kodak, Maxell, Mitsubishi, Mitsui, Pioneer, Ricoh, SKC, Sony, Taiyo Yuden, TDK, Yamaha
CD-RW	Mitsubishi, Ricoh, SKC

Solving Technical Problems

Problem	Meaning / Solution
The CD-R/RW drive is not detected by the computer. After installing the CD-R/RW drive, the PC gets slower.	◆ Check that the power, audio and E-IDE cables are correctly connected to the computer. ◆ Change the E-IDE cable and reconnect it to the computer. Preferably, connect a second E-IDE cable to the CD-R/RW drive in master mode; see page 7 for further details. ◆ Check the position of the jumper in the master/slave select terminal.
The CD-R/RW drive is not recognized by MS-DOS.	◆ Reinstall the device driver or update it with the latest version by downloading it from the Samsung Web site.
The CD-R/RW drive is not detected by Windows.	◆ This case may occur when there is a Windows installation problem; reinstall Windows.
No sound is heard from an audio CD.	◆ Check whether the audio cable is correctly connected to the sound output terminal on the CD-R/RW drive and the sound card CD-IN terminal. ◆ Check that the sound card is operational. ◆ Adjust the volume control. ◆ Run the CD player supplied with Windows or your sound card. You can listen to the CD by connecting headphones to the appropriate connector. If you have installed the appropriate player, such as Microsoft Windows Media Player, you can adjust the volume using the headphone volume control on the drive front panel. ◆ If you select DIGITAL at CD Audio Play in Media Player of Windows ME, the earphone does not appear in the Digital Mode.
A CD is not read or is read too slowly.	◆ Check whether the CD is of good quality and clean it, if necessary.
The disc compartment will not open.	◆ Check that the power cable is correctly connected. ◆ Power off and disconnect the PC. Insert a pin or unfolded paper clip in the emergency hole and push firmly until the disc compartment opens.
When the MPEG software plays a Video CD, the pictures are not regular and the running speed is too slow.	◆ Adjust the size of the replay screen. ◆ After checking the display resolution, adjust it, if necessary.
The <i>Disc is not in</i> message is displayed even though a disc has been inserted.	◆ The computer may not recognize the disc if you start playback too quickly after inserting the disc. Open and close the disc compartment and try again. ◆ Clean the disc and try again.
The CD-R/RW drive is not detected after it is connected to a sound card.	◆ The interface mode of the sound card is AT-BUS. You must therefore connect the CD-R/RW drive to the E-IDE port on the PC mother board, rather than to the sound card, or install an E-IDE-compatible sound card.

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Technical Specifications

SAMSUNG continually strives to improve its products. Both the design specifications and these user instructions are thus subject to change without notice.

Item		SW-224	
Disc	Disc types supported in read mode	CD-DA, CD-ROM mode 1, CD-ROM XA mode 2, Form 1, Form 2, CD-Plus, CD-Extra, Photo-CD (Single, Multi-session), Video CD ready, Enhanced CD, CD-I/FMV, CD-R, CD-RW, CD-TEXT	
	Disc types supported in write mode	CD-R, CD-RW	
	Erasing disc types	CD-RW	
	Disc diameter	120 mm or 80 mm	
Drive Performance	Data transfer rate	CD-R (write mode)	600 KB/sec. (4X), 1200 KB/sec. (8X) 1800 KB/sec. (12X), 2400 KB/sec. (16X) 3600 KB/sec. (24X)
		CD-RW (write mode)	300 KB/sec. (2X), 600 KB/sec. (4X), 1500 KB/sec. (10X)
		Read mode	6,000 KB/sec. (max.), PIO Mode 4, DMA Mode 2
	Access time (1/3 stroke)	CD-RW : 120 ms (typical)	
	Laser	Semiconductor laser	
	Slide mechanism	Stepping motor	
	Spindle motor	Brushless motor	
	Load mechanism	Tray. DC motor (Soft Eject).	
	Error rate	Mode 1: 1 block/10 ¹² , Mode 2: 1 block/10 ⁹	
Front Panel	Eject button	Auto eject or Auto inject	
	Indicator (LED)	Green when playing or recording a disc	
	Headphone output	Stereo mini-jack (Ø 3.6 mm) 0.60±20% (vrms) 33 Ω	
	Volume control	Dial type	
Rear Panel	Required power	+5 VDC: 1.5 A (max.), +12 VDC: 1.5 A (max.)	
	Interface connector	ATAPI (EIDE)	
	Audio output	Line out 0.75 ± 20% (vrms): 47 KΩ	
	Jumper block	Device configuration jumper	
Operating Environment	Operations	Temperature: 5~45°C Humidity: 10~80%	
	Storage	Temperature: -25~55°C Humidity: 10~90%	
General	Dimensions	148.2 (W) x 42 (H) x 184 (D) mm (including bezel)	
	Net weight	750 g	
Reliability	MTBF	125 000 POH (20% duty)	

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