

# SimpleTech CompactFlash Card User Guide

## Introduction

This is a Installation and User Guide for the SimpleTech® CompactFlash® Card and the CompactFlash® Adapter.

The SimpleTech CompactFlash Card is a small form-factor card used in several devices including audio recorders, digital cameras, wireless and Personal Digital Assistants (PDA). The CompactFlash Card is a solid-state, nonvolatile removable mass storage which shows up as an ATA hard drive to the host. However, compared to ATA hard drives with rotating discs, the Solid State CompactFlash Card is extremely compact and rugged.

The CompactFlash Adapter allows the CompactFlash Card to plug into a PC Card socket. Therefore, the CompactFlash Card with the CF® Adapter provides removable mass storage to thousands of hosts that have PC Card sockets, standard on many notebook computers.

The SimpleTech CompactFlash Card is available in several capacities for your specific applications. The SimpleTech CompactFlash Card Adapter is available for using CompactFlash Card in PC Card (PCMCIA) slots. Visit [www.simpletech.com](http://www.simpletech.com) for details.

## Installation Requirements

The following are the minimum requirements for using the CompactFlash Card:

- A host (e.g., a computer or other device such as a digital camera that uses CompactFlash Cards as a storage device) with one of the following sockets:
  - A CompactFlash socket
  - A PC Card Type II or III (PCMCIA) socket when using the CompactFlash with the CompactFlash Adapter
- One of the following operating systems:
  - MS-DOS 5.0 or higher, Windows 3.x, and Card and Socket Services compatible with PCMCIA Release 2.1 or higher
  - Windows 95/98/98SE/ME/XP
  - Windows NT 3.5.1 /4.0 or 2000
  - OS/2 Warp!
  - Mac OS 8.6 or higher
  - Other hosts with firmware that support ATA data storage standards (e.g., digital camera)

## Installing the CompactFlash Card

This chapter describes installing the CompactFlash Card in the following sections:

- *Attaching the CompactFlash Adapter (If Applicable)*
- *Plugging in the CompactFlash Card in PC Card slot*

Most hosts do not require additional drivers to support CompactFlash Card. If the host does not recognize the CompactFlash Card when following the instructions in this chapter, refer to the guides provided with the host or operating system for instructions on installing PC Card (PCMCIA) drivers provided with the host or operating system.

If you plan to use the CompactFlash in a host that has a PC Card (PCMCIA) socket, proceed to ***Attaching the CompactFlash Card to the CF Adapter***; otherwise, proceed to ***Plugging in the CompactFlash***.

### Attaching the CompactFlash Card to the CF Adapter (If Applicable)

Attach the CompactFlash Card to the CF Adapter as follows:

1. Orient the SimpleTech logos on both the CompactFlash Card and the CF Adapter upwards.
2. With the "Insert" arrow on top of the CompactFlash Card and pointing towards the CF Adapter, place the CompactFlash Card onto the rails of the CF Adapter (see *Figure below*).
3. Slide the CompactFlash Card all the way into the CF Adapter until the connector on the CompactFlash Card fully mates with the connector on the CF Adapter.

***If the CompactFlash Card doesn't appear to seat properly, try turning the CompactFlash Card over. Do not force the CompactFlash Card into the socket under any circumstances.***

Proceed to ***Plugging in the CompactFlash Card Adapter in PC Card socket***.



### Attaching CF Card to CF Card Adapter

#### Plugging the CompactFlash Card in the PC Card socket

If you are using the CompactFlash Adapter, when the sections below refer to “CompactFlash Card,” substitute “CompactFlash Card and CF Adapter.” Refer to the section appropriate to your operating system or host.

***In most hosts, the SimpleTech logo will be facing upward when plugging the CompactFlash Card in the socket. If the CompactFlash Card doesn't appear to seat properly, try turning the CompactFlash Card over. Do not force the CompactFlash Card into the socket under any circumstances.***

#### Windows 95/98/98SE/ME/NT4.0/2000/XP

Proceed as follows:

1. Start the Windows operating system and wait for the system to completely boot.
2. Plug the CompactFlash Card into the socket.
3. The computer will respond with a beep and with a picture of the CompactFlash Card on the right corner of the task bar.

OR,

Windows may respond with dialog boxes. If the “**New Hardware Found**” window appears, select “**Windows default driver**,” then click on “**OK**.” Follow the on-screen prompts. If additional drivers are required, Windows OS may prompt you to insert the original diskettes of Windows OS. Once this is done, the CompactFlash Card will be automatically recognized and configured when you plug in the CompactFlash Card.



Proceed to *Using the Compact Flash Card*

#### Windows 3.x with Card and Socket Services Release 2.1 or Higher

Proceed as follows:

1. Start Windows 3.x.
2. Plug the CompactFlash Card into the socket. The computer may beep, when the computer recognizes the CompactFlash Card.

Proceed to *Using the Compact Flash Card*.

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## Windows NT 3.5.1

**Windows NT 3.5.1 does not support Plug n' Play. You must plug the CompactFlash Card into the socket before starting Windows NT 3.5.1.**

1. Before starting Windows NT 3.5.1, plug the CompactFlash Card into the socket
2. Start Windows NT 3.5.1.

## Mac OS

Proceed as follows:

1. Start Mac OS.
2. Plug the CompactFlash Card into the socket.
3. The CompactFlash Card is mounted on the desktop.

Proceed to *Using the CompactFlash Card*.

## Other Hosts or Operating Systems

Refer to the guides provided with the host or operating system for instructions on plugging the CompactFlash Card into the socket. Then proceed to *Using the CompactFlash Card*.

## Using the CompactFlash Card

This chapter provides information on the following topics:

- *Inserting and Removing the CompactFlash Card*
- *Protecting the CompactFlash Card*

If you are using the CompactFlash Adapter, when the sections below refer to "CompactFlash Card," substitute with "CompactFlash Card and CF Adapter." Refer to the section appropriate to your operating system or host.

With most hosts, the CompactFlash Card is used like a removable hard drive, e.g., "Drive D:" on PC compatibles or a volume (i.e. drive icon) on Macintosh computers.

## Inserting or Removing CompactFlash Card

Refer to the section appropriate to your operating system.

### Inserting or Removing the CompactFlash Card with Windows 98/98SE/ME/NT4.0/2000/XP

You can insert the CompactFlash Card at anytime. When you are done using the CompactFlash Card, it is recommended that you "stop" the CompactFlash Card before removing the CompactFlash Card. Proceed as follows:

1. Double-click with the normal-select mouse button on the PCMCIA icon located on the right corner of the **task bar** or in **settings - Control Panel- PC Card (PCMCIA) icon**. The "**PC Card Properties**" window appears. Select the CompactFlash Card from the list. Click on the "**Stop**" button. When prompted to remove the CompactFlash Card, proceed to *Step 2*.



The PC Card Properties Dialog Box

2. If your computer has an eject button on the socket, press the button to release the CompactFlash Card. Then, pull the CompactFlash Card from the socket.  
OR,  
If your computer does not have an eject button on the socket, carefully pull the CompactFlash Card straight out from the socket.

Proceed to *Protecting the CompactFlash Card*.

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## Inserting or Removing the CompactFlash Card with Windows NT 3.5.1

**Windows NT 3.5.1 does not support Plug n' Play. You must plug the CompactFlash Card into the socket before starting Windows NT 3.5.1.**

You must insert the CompactFlash Card before booting into Windows NT 3.5.1. To remove the CompactFlash Card, you must first exit Windows NT 3.5.1, then proceed as follows:

- If your computer has an eject button on the socket, press the button to release the CompactFlash Card. Then, pull the CompactFlash Card from the socket, OR
- If your computer does not have an eject button on the socket, carefully pull the CompactFlash Card straight out from the socket.

## Inserting or Removing the CompactFlash Card with Windows 3.x and OS/2 Warp

You can insert the CompactFlash Card anytime. You can remove the CompactFlash Card anytime the computer is not accessing the CompactFlash Card. Some computers will beep when the computer recognizes the change in status of the socket. To remove the CompactFlash Card, proceed as follows:

- If your computer has an eject button on the socket, press the button to release the CompactFlash Card. Then, pull the CompactFlash Card from the socket, OR
- If your computer does not have an eject button on the socket, carefully pull the CompactFlash Card straight out from the socket.

Proceed to *Protecting the CompactFlash Card*.

## Inserting or Removing the CompactFlash with Mac OS

You can insert the CompactFlash Card at anytime. When you are done using the CompactFlash Card, drag the CompactFlash Card icon into the trash. The CompactFlash Card is ejected from the computer in most cases. Otherwise, carefully remove the card from the socket.

## Protecting the CompactFlash Card

Observe the following precautions:

- Never remove the CompactFlash Card when the computer is accessing the CompactFlash Card.
- Keep the CompactFlash Card away from electrostatic sources or magnetic fields.
- Do not bend, drop or impact the CompactFlash Card.
- Avoid heat, water, and direct sunlight.
- Please note that as security precautionary measure, postal department might subject all articles sent through mail to high level radiation. High level radiation erases all data in the CompactFlash Card and renders the card useless. Hence please check and verify postal service policies before sending the cards in the mail.

## Technical Support

If you experience any difficulties with the installation of the CompactFlash Card or CompactFlash Adapter, visit our web site [www.simpletech.com](http://www.simpletech.com). If you are still unable to resolve the problems, contact SimpleTech Technical Support at the following:

- Tel: 949-476-1180 or  
1-800-367-7330 (USA & Canada only)
- Fax: 949-476-1209
- EMail: [support@simpletech.com](mailto:support@simpletech.com)

## Specifications

### SimpleTech CompactFlash Part Numbers

8MB-512MB CompactFlash Card .....	STI-ATACF/xx
CompactFlash(CF) Card Adapter .....	STI-ATACF/AD

### Physical Dimensions (CompactFlash Card without CF Adapter)

Length .....	1.433 in (36.4 mm)
Width .....	1.685 in (42.8 mm)
Body Thickness .....	0.130 in (3.30 mm) (Type I CF Card) /
.....	0.196 in (5.00 mm) (Type II CF Card)
Weight .....	0.40 oz. (11.4 g) (Type I CF Card) /
.....	0.47 oz. (13.5 g) (Type II CF Card)

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## Physical Dimensions (CompactFlash Card with CF Adapter)

Length .....	3.370 in (85.6 mm)
Width .....	2.126 in (54.0 mm)
Body Thickness .....	0.1968 in max (5.0 mm max) (Type I CF Card with Type II PC Card Adapter)

## Performance

Startup Times (Reset to Ready) .....	100 ms (max)
Startup Times (Sleep to Idle) .....	2 ms (max)
Data Transfer Rate To/From Flash .....	Up to 8 MBytes/s (Burst)
Controller Overhead (Command to DRQ) ..	2 ms (max)

## Power

DC Input Voltage ( $V_{CC}$ ) .....	3.3V $\pm$ 5%	5.0v $\pm$ 5%
Typical Power Dissipation		
Sleep Current .....	0.2 mA	0.5 mA
Read Current .....	25 mA	40 mA
Write Current .....	25 mA	45 mA

## Reliability and Maintenance

MTBF (Meantime between failure) .....	500,000 power-on hours
Data Write/Erase Endurance .....	300,000 minimum cycles
Data Reliability .....	< 1Non-Recoverable Error in $10^{14}$ bits read

## Environmental

Operating Temperature .....	
Commercial .....	0°C to +70°C
Extended .....	-25°C to +85°C
Industrial .....	-40°C to +85°C
Storage Temperature .....	-55°C to +125°C
Humidity .....	5% to 95% non-condensing
Altitude (relative to sea level) .....	50,000 ft. max.
Acoustic Noise (at 1 meter) .....	0 db
Operating Vibration .....	100-200 Hz @ 147meter/sec <sup>2</sup> (20 Gs)
Operating Shock .....	4903.3 meter/sec <sup>2</sup> (2000Gs)

## Limited Product Warranty

SimpleTech, Inc. ("STI"), warrants that this product will be free from defects in materials and workmanship during the warranty period, and will perform according to product documentation. This warranty is expressly limited to product repair or replacement, at the sole discretion of STI.

Except for the express warranty expressed above, STI grants no other warranty. All implied warranties of merchantability and fitness for a particular purpose are expressly disclaimed and are not applicable to the product. This warranty is contingent upon proper use of the product in the application for which it is intended and does not cover any product that was modified or subjected to unusual physical or electrical stress.

STI's maximum liability for breach of, or resulting from, this warranty will be limited to an amount not exceeding the original product purchase price. In no event will STI be liable to any party for any special, consequential, or incidental damages, or for damages for personal injury or property damage.

The defective product must be returned to original place of purchase with valid proof of purchase. State and local laws may apply.

CompactFlash Card Product Warranty Period: 1 Year

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