

# Chapter 1 Introduction

Congratulations on your purchase of the *i540* or *i542 SpeedMaster* Fast SCSI-2 Bus Master host adapter. SIIG's goal is to provide its customers with affordable, quality products, backed by prompt customer support.

Information for both the *i540 and i542 SpeedMaster* SCSI host adapter models are covered in this manual. Note that throughout this manual, references to *SpeedMaster* apply to both the *i540* and *i542* models. The only difference between the models is the *i542* floppy drive controller feature, which will be documented as needed. If you purchased the *"Gold"* version, the board's features and performance are the same, the difference is that it includes the full version of CorelSCSI drivers and utilities.

The purpose of this comprehensive user's manual is to:

- introduce you to your *SpeedMaster* SCSI Bus Master host adapter features and specifications
- provide an introduction of the SCSI bus and rules of termination for proper set up
- guide you through the steps for an easy, trouble-free installation of hardware and software in your system
- provide technical support information in the event of a problem.

Before installing your *SpeedMaster* board, please take the time to review this chapter for unpacking instructions and an overview of the key features of your *SpeedMaster*. If you are not familiar with the SCSI bus and termination rules, please refer to *Chapter 3: Introduction to SCSI*. Then refer to *Chapter 2: Quick Installation* (for experienced users) and/or *Chapter 4: Hardware Installation* and *Chapter 5: Software Installation*, for easy to follow installation instructions. *Chapter 6: SCSI BIOS Setup* will guide you on the use of the onboard SCSI BIOS Setup Utility for configuring the SCSI BIOS and device options, if needed.

## 1-1 Unpack Your *SpeedMaster*

Before installing your *SpeedMaster* board, verify that the following items are included in the packaging carton:

- One *SpeedMaster* board
- One internal 50-pin SCSI ribbon cable
- One 34-pin floppy ribbon cable *(i542 model only)*
- Two Drivers Installation diskettes
- CorelSCSI software package *(Gold version only)*
- This User's Manual

Please consult your dealer if any item is damaged or missing.

### 1-1.1 Static Electricity Precaution

One of the routine precautions you must be aware of when working with computer components is the problem of static electricity discharge.

**Leave the *SpeedMaster* board in its static-resistant bag until you are ready to install it.**

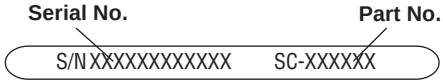
***WARNING:*** *STATIC ELECTRICITY DISCHARGE may permanently damage your system. In order to avoid possible static electricity discharge during installation procedures, please follow the guidelines below:*

- *Discharge any static electricity build up in your body by touching a large grounded metal surface or the computer's case (if plugged in), for a few seconds.*
- *During installation procedures, avoid any contact with internal parts. Handle boards only by their edges.*

## 1-1.2 Record the Serial Number

Please take a moment to record the serial number.

In order for SIIG's Technical Support or RMA Department to give you prompt service (if needed), you will need the following *SpeedMaster* board information. ***The serial number label is located on the side of the box and on the back of the SpeedMaster board.***




Serial Number: _____
Part Number: _____
Date purchased: _____

## 1-1.3 Record the Configuration Settings

For future reference, record the configuration settings of the *SpeedMaster* when you install the board:

I/O Port Address _____
BIOS Address _____
Hardware IRQ _____
SCSI ID # _____

## 1-1.4 Record the Attached SCSI Device IDs

As a convenient reference, write in the SCSI device(s) you have installed next to its assigned SCSI ID number.

SCSI ID 0 _____
SCSI ID 1 _____
SCSI ID 2 _____
SCSI ID 3 _____
SCSI ID 4 _____
SCSI ID 5 _____
SCSI ID 6 _____
SCSI ID 7 _____

## 1-2 Introducing Your *SpeedMaster*

The *SpeedMaster* is a high performance, Plug-and-Play compatible, ISA-bus Fast SCSI-2 host adapter which provides connectivity to up to seven peripheral SCSI devices. These devices include: CD-ROMs, optical devices, removable disks, fixed disks up to 8.4 gigabyte capacity, floptical devices, tape drives, zip drives and scanners. The *i542 SpeedMaster* includes a floppy controller that supports two floppy drives.

The *SpeedMaster* can be used in both Plug-and-Play and non-Plug-and-Play computers. It also supports the SCSI Configured Auto-Magically (SCAM) standard, which assigns and resolves SCSI ID conflicts automatically for SCAM supported devices. For devices that do not support SCAM, you will have to manually assign the SCSI IDs.

By using Bus Mastering technology, the *SpeedMaster* can transfer data to and from SCSI devices at the maximum possible rate, up to 10 MBytes/sec. Data transfers are managed independently via an onboard RISC processor and DMA channel, which frees the system CPU for other tasks.

The *SpeedMaster* can function as a primary controller (the onboard SCSI BIOS supports INT 13h BIOS functions as well as BIOS boot up functions in SCSI only systems); or it can coexist as a secondary controller in a system which already has a primary IDE, ESDI or MFM hard drive controller card. The BIOS can support up to seven SCSI hard disk drives on systems using MS-DOS 5.0 or later. (Only two drives (without special driver) are supported when using versions MS-DOS 4.0 or earlier.)

Regarding termination, your *SpeedMaster* board is designed with an "Active Termination" feature, which automatically sets the proper termination for the board. Compared to the traditional resistor method, onboard semiconductor transistor chips provide the fastest and most accurate method of proper termination by adjusting to the actual voltage signal levels on the bus. Active termination is particularly important for handling the speed of Fast SCSI-2 devices.

Your *SpeedMaster* comes with a full complement of software support. A convenient onboard (ROM resident) SCSI BIOS Setup Utility allows for easy configuration and optimization of the *SpeedMaster* and peripheral devices. Two *Drivers Installation* diskettes provide a bootable configuration/diagnostics program, drivers and ASPI managers for DOS, Windows 3.x, Windows NT, Windows 95, NetWare, OS/2 and various UNIX operating systems. If you purchased the "*Gold*" version, it is bundled with the CorelSCSI manager package which includes DOS/Windows auxiliary drivers and utilities to support most SCSI devices that need them, such as CD-ROMs and tape drives.

### 1-2.1 Key Features and Benefits

- Supports up to 7 SCSI devices
- Slave coexistence with IDE, ESDI, MFM hard disk controllers
- Supports SCSI-1 and SCSI-2 devices
- Plug-and-play compatible
- Built-in RISC microprocessor
- Multi-tasking, multi-threaded I/O, scatter/gather, tagged queuing, disconnect/reconnect, synchronous and asynchronous data transfer, ASPI compliant
- SCSI BIOS Setup utility for configuring SCSI bus characteristics
- Automatic Active Termination control
- Watchdog timer, prevents system hang due to malfunctioning SCSI devices
- Supports hard drives up to 8.4 gigabytes per drive
- Supports a wide range of SCSI devices: hard disk drives, CD-ROM drives, tape backup drives, printers, scanners

**ISA-Bus (16-bit) Interface**

- Supports scatter-and-gather function
- SCSI Configuration Auto-Magically (SCAM) supported
- Supports 1st Party DMA Bus Master Mode

**SCSI Bus Interface**

- 8-bit FAST SCSI-2, 10 Mbytes/sec synchronous data transfer rate
- Single-ended interface provided through a 50-pin internal SCSI connector and a 50-pin high-density external SCSI connector
- Tagged queuing for SCSI-2 supported
- Supports up to 7 peripheral devices per adapter board
- Allows mix of SCSI-1 and SCSI-2 peripheral devices

**SCSI Bus Data Transfer Rate:**

- 10 Mbytes/sec synchronous burst on the SCSI bus (Fast SCSI-2)
- 5 Mbytes/sec synchronous burst on the SCSI bus
- 3 Mbytes/sec asynchronous on the SCSI bus

**Floppy Interface *(i542 model only)***

- Supports up to 2 floppy disk drives: 3.5" and/or 5.25" 360K, 720K, 1.2MB, 1.44MB
- Floppy function can be disabled by an external DIP switch on bracket

## 1-2.2 Software Drivers and Utilities

- Configuration/installation software
- Complete ASPI Manager for DOS, Windows 3.x, Windows NT, Windows 95, OS/2, NetWare, SCO Unix, Interactive Unix, UnixWare

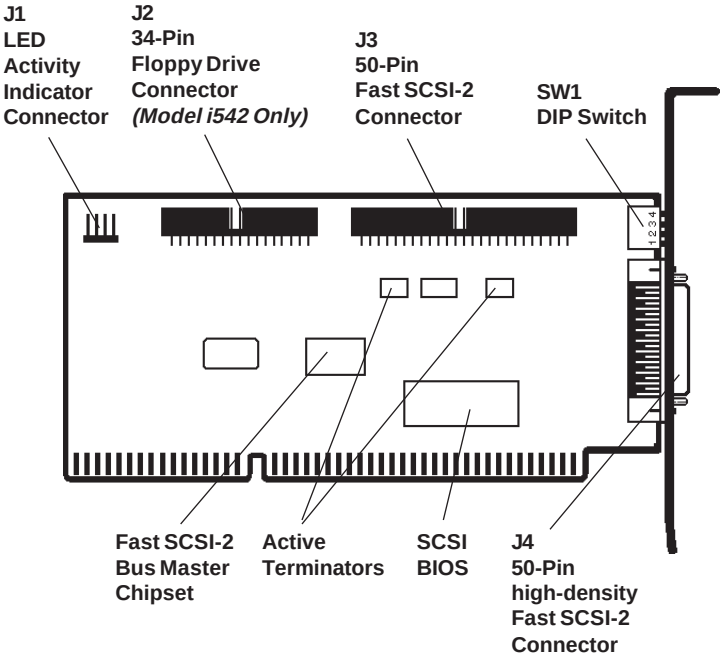
**For Gold Version Only**

*Comprehensive DOS/Windows CorelSCSI drivers for:*

- Hard drives, CD-ROM drives/writer, WORM drives, removable drives, multifunction drives, QIC tape drives, rewritable drives, floptical drives, printers, scanners, 8 MM tape drives, DAT drives
- Extensive capabilities for CD-ROM
- Supports scanners from leading manufacturers
- Backup software
- Advanced diagnostic tools

### 1-2.3 System Requirements

- One 16-bit ISA-bus slot on an IBM AT-compatible computer
- A 3.5" floppy drive and hard disk drive
- MS-DOS v4.0 or higher
  (CD-ROMs require: CORELCDX.COM which is included in the "Gold" CorelSCSI package; or MSCDEX.EXE which comes with MS-DOS v6.x.)
- MS Windows v3.1 or higher
- Minimum 640 KB of RAM
- Minimum 2 MB free disk space for basic installation




***SpeedMaster* Board Layout**