7. PC PROGRAMS

While SIMCHECK II, or SIMCHECK II se, is a stand-alone unit, the product includes the Communications Programs that allow you to upgrade your SIMCHECK II's flash EPROM from our Web site. It also provides you with all the essential communication functions you will need between all members of the SIMCHECK II product line and your PC. This program comes with the SIMCHECK II product and includes the following main features:

The SIMCHECK II Communications program provides you with:

- Capability to download updated firmware files from our FTP server onto the SIMCHECK's Flash memory. This process can now be done in a single operation called Automated Firmware Update.

- Realtime interface between SIMCHECK and the PC so that you can control SIMCHECK from your PC and also view, save, and print test results from the Test Log.

- SPD support for editing, saving, and programming of the SPD chip on your tested memory devices.

- Setup support for SIMCHECK.

- Graphics interface between SIMCHECK's screen to your PC display.

- Extensive, context-sensitive On-Line Help and Tutorials.

HARD DISK INSTALLATION:

Insert the enclosed diskette into your 3.5" disk drive (assumed as drive A) and from the Start menu, select RUN and type A:\SETUP.exe.

After following the instructions during the installation process, the PC PROGRAMS will be installed in a newly created SIMCHECK directory; the software will also create a short cut icon on your desktop. Also included is an UNINSTALL utility which will remove the program and its components from your system should you ever wish to do so.

This program requires Windows 95/98/NT. Users with Win 3.1x operating systems may wish to check our website for our older 16-bit Downloader and Realtime Interface PC programs.

7.1 SIMCHECK II DOWNLOADER

The SIMCHECK Downloader portion of the PC Programs is the key utility for performing SIMCHECK II's FLASH upgrade. By visiting our Web site (http://www.innoven.com), you can download our current version of the SIMCHECK II firmware in zipped format. This file is named "sc2f.zip" and once extracted will generate the "sc2f.bin" firmware file. Also you can review our development log to see what the recent firmware enhancements are. You should find the firmware in the downloads portion of our web site. Once downloaded to your computer, you can upgrade your SIMCHECK II using the SIMCHECK II PC Interface software.

Use the enclosed serial cable to connect SIMCHECK II to an available serial port on your PC. In most modern PCs, the serial ports use the standard 9-pin D-SUB connector. Older computers may use a 25-pin D-SUB connector, for which will require the use of a 25-pin to 9-pin serial port adapter. NOTE: Conforming to the RS-232C standard, SIMCHECK II's serial interface uses pin 2 for transmitting (TxD), pin 3 for receiving (RxD), and pin 5 for ground.

Be sure to upgrade every month to insure the best results from your SIMCHECK II investment.

7.1.1 UPGRADING SIMCHECK II's FIRMWARE

The Downloader portion of the SIMCHECK Communications program sends a variety of file data to SIMCHECK, including Firmware and Activation Code files. We recommend that you review SIMCHECK II's development log on our Web site, which outlines the latest changes and added features of the new SIMCHECK II firmware.

FIRMWARE FILES

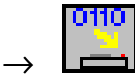Upgrading SIMCHECK II is accomplished by following the procedure outlined below:

- Enter the PC PROGRAM INTERFACE by double clicking on the SIMCHECK II icon on your desktop.

- Select FILE from the menu bar and choose OPEN. Select the file SC2F.BIN from the SIMCHECK directory. **The SC2F.BIN file is the current SIMCHECK II**

firmware, which you must download from our Web Site to your computer (compressed as SC2F.ZIP). Click the OPEN button.

You can quickly send the file to SIMCHECK by pressing the buttons:

→

Select SC2F.BIN

→

■ With SIMCHECK II ON, select SIMCHECK from the menu bar and then select SEND DATA. Click on SEND FIRMWARE when prompted by the dialog box. SIMCHECK II should now be downloading the new program. During the download, you will observe confirmation on your PC screen as the program is being transmitted and is flashed to SIMCHECK II's memory.
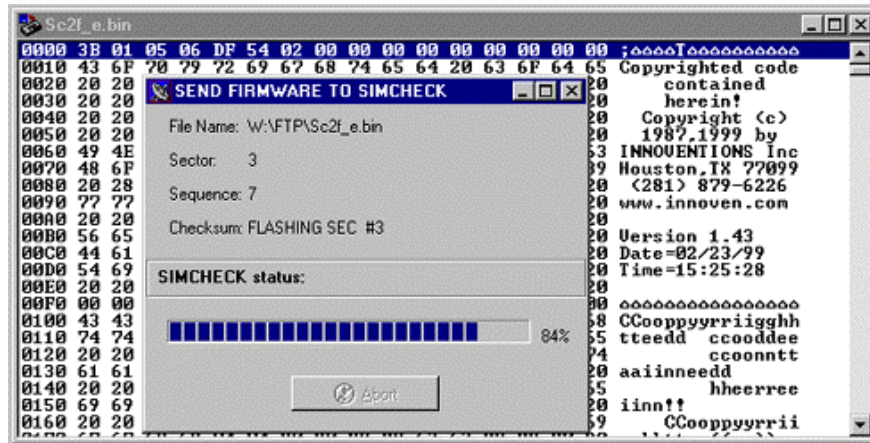
■ When the transfer is complete, a brief message saying DOWNLOAD END: SUCCESS will appear on your monitor. You can now press ESC and allow SIMCHECK II to reset with the new program.

ACTIVATION CODE FILES

The Downloader can be used to also send special Activation Code files to SIMCHECK in order to activate selected features, which you may purchase through the Internet.

The Activation Code files are transferred in the same manner as firmware files. Since Activation Code files are very small, the download process for them is instantaneous, and no process dialog box will appear as when transferring Firmware files.

7.2 AUTOMATED FIRMWARE UPGRADE

If your computer has a dial-up or direct connection to the Internet, you may use an automated process to upgrade your SIMCHECK with the latest firmware version automatically. From the SIMCHECK menu, simply select Automatic Firmware Upgrade.
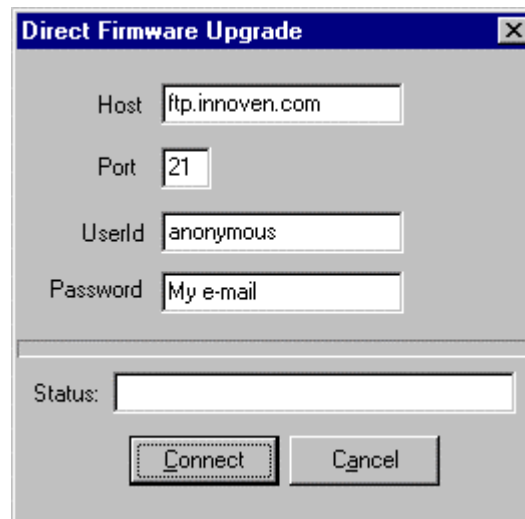
It first connects to INNOVENTIONS' FTP server and downloads the "sc2f.zip" file to the SIMCHECK program directory. It then unzips the "sc2f.zip" into a new "sc2f.bin" firmware file (after backing up any existing firmware file with the same name to "sc2f.bak"). Finally, it activates the firmware Downloader program and prompts you to upgrade your SIMCHECK.

You may also click on

to activate the Automatic Firmware Upgrade Process.

If your computer is configured for an automatic dial-up connection, simply start the process by clicking the Connect button.

If your computer is not configured for an automatic dial-up connection (that is, you always need to manually activate the connection before accessing the Internet with your other programs), please activate your Internet connection before starting the process.

The FTP connection dialog box shows UserID as "anonymous" and the password field should show your correct e-mail address (if you have completed Software Setup section of this program). The status portion of the FTP connection dialog box shows the

progress of the download process. At the successful end of the download process from the FTP server, the firmware Downloader is activated, prompting you to send the new firmware to SIMCHECK.

While the process is automatic, it allows you to abort at various key points. If you abort during the FTP download, your older "sc2f.bin" firmware file remains intact. If you abort the firmware Downloader program, your SIMCHECK will not be upgraded, but the firmware file "sc2f.bin" will be updated. Please note that this process replaces your previous firmware file and keeps only one backup as "sc2f.bak". You may want to keep previous hardware versions by renaming them "sc2f_142.bin" or "sc2f_143.bin (for versions 1.42 and 1.43 respectively).

If your computer is not connected to the Internet, and you usually download the firmware file with another computer at your organization, you cannot use this Automated SIMCHECK Upgrade process. However, you can still upgrade your SIMCHECK with the Firmware Downloader after copying the "sc2f.bin" file to your computer or accessing it from a floppy diskette.


You may also click on

to activate the Realtime Interface.

7.3 REALTIME INTERFACE

The Realtime Interface allows you to control SIMCHECK from your PC. It also allows you to log data and to print the test results. Selecting Realtime Interface from the SIMCHECK menu activates this part of the program.
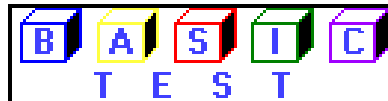
It includes a TEST LOG VIEWER, which provides a multitude of scrollable information on the tested module.
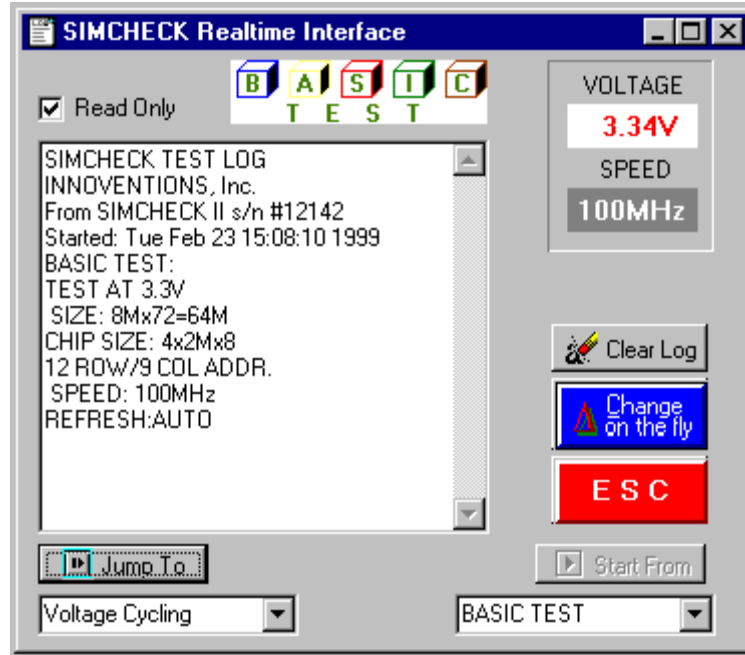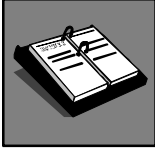
A summary of the module's size, mode type, access time, and cycle time, along with the list of the various control signals is displayed after the Basic Test. Also displayed are messages indicating if the module is nonstandard, or otherwise different in architecture.

This test log can be saved or printed by selecting the appropriate command from the FILE menu. The log is cleared normally when a new test is begun, or it can be cleared manually by clicking on the CLEAR LOG button. The red ESC key can be pressed at any time to stop an existing test.

The SIMCHECK II STATUS INDICATOR, located on the upper section of the test log window, monitors the existing stage of the module's test. This cycles from Basic Test, Extensive Test, etc, or error indications.

Please refer to Section 5.3.2 for On-The-Fly parameter changes in the Basic Test.

The CHANGE-ON-THE-FLY button allows you to change the speed and voltage parameters of the DUT during a test.

Upon selecting this function, the current test will pause while you select a different function from the change window. The options include dual voltage selection and speed override through a slide bar. The test will resume once a button is pressed. The test log will also reflect the new settings.

The START FROM button allows you to select a specific starting point for the test to be performed. The default is the Basic Test, but pressing the scroll button will allow you to select from the various test phases on the SIMCHECK II program. After a selection is made, simply press the START FROM button to activate the function.

The JUMP TO button allows you to quickly switch to a different test phase during a test. Selecting the scroll button will display the different test phases to which you can jump to, with the default being the next phase in the standard test flow. Once the new phase is selected, pressing the JUMP TO button will redirect the test flow to the selected phase. The test flow will then continue normally from this point, unless you wish to activate the JUMP TO function once again. The test log will reflect the changed test flow in its viewer.

7.4 SPD SUPPORT

Please refer to Section 5.5 for further information on SPD Management.

SIMCHECK and the SIMCHECK II Communications program provide you with useful tools for complete SPD management, including viewing, editing, file saving and retrieving, and actual SPD programming. As a stand-alone unit, SIMCHECK and its various adapters provide all the means to read and program the SPD. SIMCHECK incorporates a simple 256-byte buffer, which is used to read the SPD from a "master" module. The data in the buffer can then be used to program other modules. You can access the SPD Management Mode (on your SIMCHECK) from Standby mode by pressing F4 and selecting F3 for SPD MANAGEMENT. SIMCHECK then provides you with a straight forward menu with the following selections:

■ **F1=READ SPD** - reads the contents of the SPD on the tested module into SIMCHECK's internal buffer.

■ **F2=VIEW SPD BUFFER -** allows you to view SIMCHECK's SPD buffer on SIMCHECK itself, however, you would prefer to use your PC for viewing and editing as discussed below.

■ **F3=PROGRAM** - Programs the SPD on the inserted module with the contents of the SPD buffer. Please note that in order to program the SPD, the SPD programming option in the SIMCHECK Setup mode should be enabled.

■ **F4=VERIFY** - this function verifies your programming by comparing the SPD of the programmed module the SPD of SIMCHECK's buffer.

The SIMCHECK II Communications program significantly enhances your SPD support. It allows you to read (upload) SIMCHECK's SPD buffer onto the PC.

It provides an advanced SPD Hex Editor with which you can change or print the SPD data. It provides unlimited filing on your PC hard disk for all your SPD files. You can download your edited SPD or stored SPD files back onto SIMCHECK for subsequent programming of your modules.
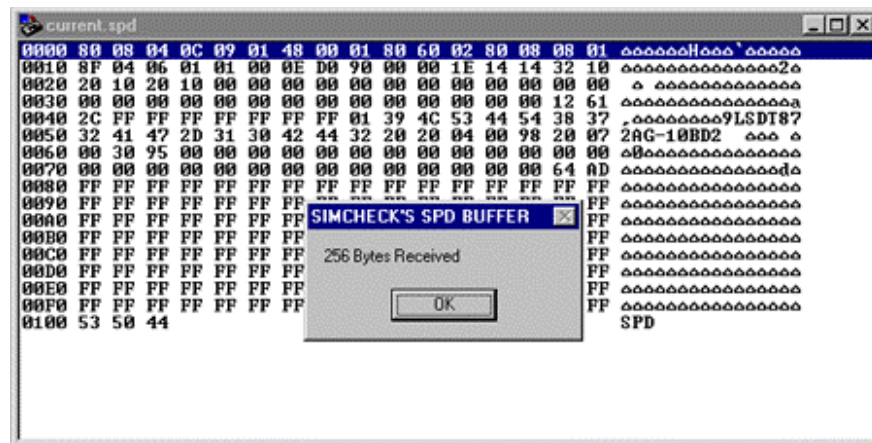
Press F1 to read the SPD data into SIMCHECK II's buffer. Now you may select RECEIVE DATA from the PC's SIMCHECK menu. The downloader will then acquire the 256 bytes of information as seen in the SPD viewer.

You may also press

to send SPD data to the Communications Program.

The viewer is a hexadecimal line editor, with edits 16 bytes per line. The first column indicates the starting SPD address for the group of 16 bytes of the current line. The following 16 bytes (two hex digits each) are the actual data to be edited. The last wide column is the ASCII representation of the data, which is meaningless for the module memory parameters, but may reveal manufacturer's codes.

To edit this information, double click on any byte shown. The line will be highlighted and the selected byte will change its color and allow you to enter a new value. Use the mouse or the right/left arrow keys to navigate throughout the highlighted line.
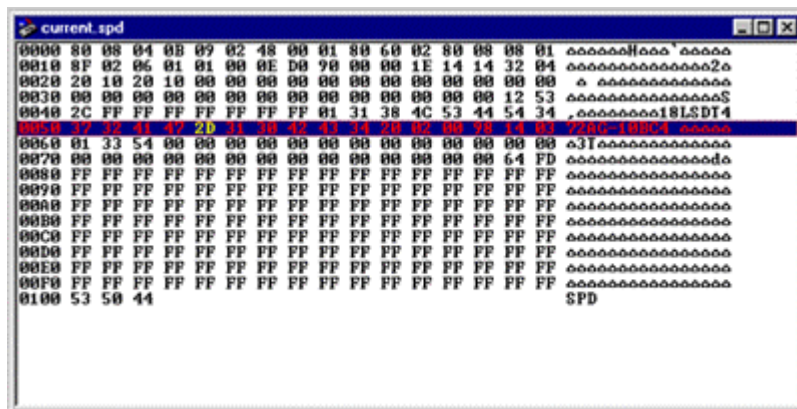
Please note that any byte changes in the highlighted line will not be accepted until the <Enter> key is pressed or a new line is selected.

Once the SPD information is edited, it can be saved by choosing the SAVE AS function from the File menu and saved with a *.SPD extension, or it can be sent to SIMCHECK II's buffer for subsequent programming the SPD of your modules.

7.5 SIMCHECK SETUP

TIP

You may also select

to enter setup mode, and press

to send setup data to SIMCHECK.

See Section 6. to learn more about SIMCHECK Setup.

You can setup SIMCHECK on your PC and store setup parameters in *.ssu (SIMCHECK SetUp) files. To enter Setup Mode, select SETUP SIMCHECK from the SIMCHECK menu.
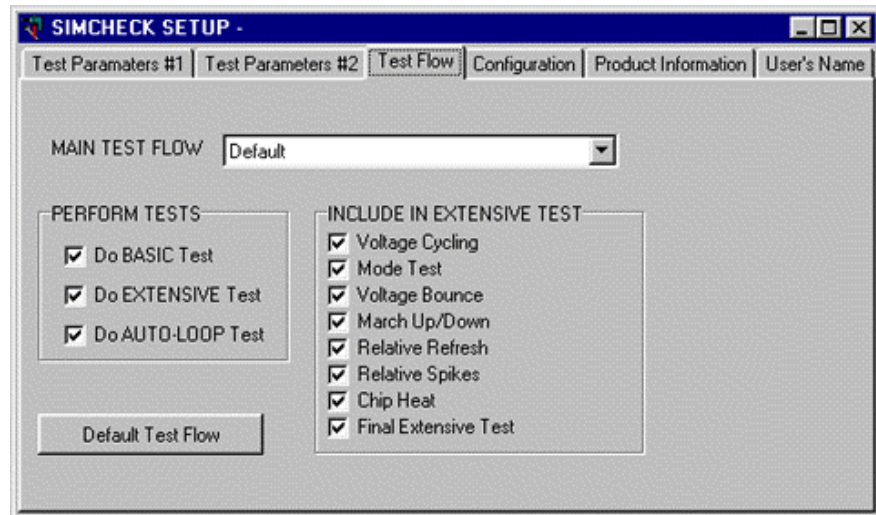
SIMCHECK SETUP -

Test Paramaters #1 | Test Parameters #2 | Test Flow | Configuration | Product Information | User's Name

MAIN TEST FLOW Default

PERFORM TESTS
☑ Do BASIC Test
☑ Do EXTENSIVE Test
☑ Do AUTO-LOOP Test

Default Test Flow

INCLUDE IN EXTENSIVE TEST
☑ Voltage Cycling
☑ Mode Test
☑ Voltage Bounce
☑ March Up/Down
☑ Relative Refresh
☑ Relative Spikes
☑ Chip Heat
☑ Final Extensive Test

The setup screen uses a multi-tab dialog box. The following tabs are available:

- **Parameters #1** - Used for setting up size, speed, frequency, and other timing parameters.

- **Parameters #2** - Used for set up of Voltage, Mode, Refresh, Test Patterns, and some special setup codes.

- **Test Flow** - Used for setting SIMCHECK's test flow.

- **Configuration** - Used for set up of SIMCHECK's configuration. Also used to setup SPD programming.

- **Product Information** – Includes "read only" information, including calibration data. This page also includes a setup file memo that you can append to a saved setup file on the PC.

When you finish selecting the setup options, choose SEND DATA from the SIMCHECK menu to transfer your setup changes to SIMCHECK where they are automatically saved.

Once the new setup is transferred, SIMCHECK will respond with

a message indicating that the new setup data has been saved in the SIMCHECK non-volatile setup memory. SIMCHECK will not save unchanged setup data.

7.6 SIMCHECK GRAPHICS COMMUNICATIONS

You may also press

to send an opened bitmap file to SIMCHECK and press

to capture a screen.

The SIMCHECK Graphics Communications allows you to send graphics (bitmaps) to SIMCHECK and to capture SIMCHECK's LCD screen. Choose SEND BITMAP from the SIMCHECK menu to send graphics, or choose GET SCREEN to perform a screen capture. You may note that certain screens change in a matter of moments after being displayed, so if you wish to capture these screens, you must select GET SCREEN at the precise moment.

You may choose to save the bitmap under a different name, or you may use the default name of LCD.bmp. The saved file will be under the same directory as your SIMCHECK II PC Software.

Clicking the DEMO ON button can enable the Graphics Demo Mode. It repeatedly displays SIMCHECK's LCD screen, providing an animated display connection to SIMCHECK during product demonstration. The bitmap graphic on the PC display can be increased or decreased, and can be printed by clicking the print button. The Graphics Communications function is generally of limited use for most end users. However, we use it extensively in developing the graphics for the SIMCHECK firmware. It is also a great tool for demonstrating the product.

7.7 SIMCHECK TEXT EDITOR

Selecting NEW from the file menu opens the SIMCHECK Text Editor. The text editor uses a standard Rich Edit to allow you to create, open and review, edit, print, and save various text files. Such files can be test log files (*.log) that are saved by the Realtime Test Log, or they can be any other type of text file for that matter. You can also use the text editor to print the "simcheck.ini" (the configuration file for this program). When you create a regular text file, please use the default *.txt extension. The text editor uses the same editing features that are available on other simple editors.

7.8 COMMUNICATIONS DIAGNOSTICS

This mode allows you to view the actual ASCII characters that SIMCHECK uses in its communication with the PC via the serial port. Select COMMUNICATION DIAGNOSTICS from the SIMCHECK menu to open this window.

In addition to troubleshooting use, this mode is also utilized in some of our diagnostic procedures to view the structure of unsupported modules. You may be requested by our Tech Support department to set up SIMCHECK itself at some debug mode and then to view and print the communications' data.

You may also press

**to view the
diagnostics window.**