SERIAL BUFFER UTILITY

User's Manual

Revision:

August 5, 1999

Produced for:
Epson

Revision Table

Date	**Authored By:**	**Reference:**	**Description**
08/05/99	Thomas Heckler	SBM2_12.EXE	Program was upgraded to correct bugs -
			This document changed to reflect changes
			and to update screen shots.
			Section 3.1 also changed to correctly state
			program file name
			Utility Program filename changed
			From: Serdown1.EXE (old version)
			TO: SBM2_12.EXE (NEW version 1.2)

1. INTRODUCTION

The Serial Buffer Utility is a DOS based menu program for the Serial Buffer II Module (SBM II). This utility can configure the Host Computer communications parameters, download an application program to the module, and provide a basic level of diagnostic testing of the printer and module.

2. SETUP REQUIREMENTS

2.1. OPERATING SYSTEMS

The Utility program will operate from a PC computer running DOS 6.5 or greater, Windows 3.1, Windows 95, or Windows 98.

2.2. CONNECTIONS

The Module can be attached to either the COM 1 or COM 2 port of the PC. The Utility Program Setup function will allow selection of the COM port and communication parameters. A standard Serial Communication Cable from the PC to the Serial Buffer will be needed. The end that attaches to the Serial Buffer Module will need to be an RS-232, 25 pin, male connector (the SBM II has a female RS-232, 25 pin connector).

Figure -1- Serial Buffer II Module Connections to Host Computer

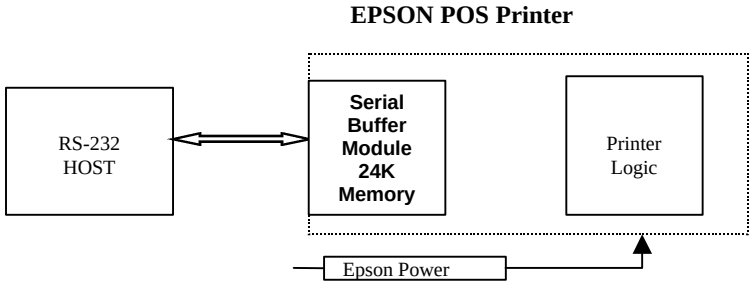


Table -1- Serial Buffer II Module Cable Connector

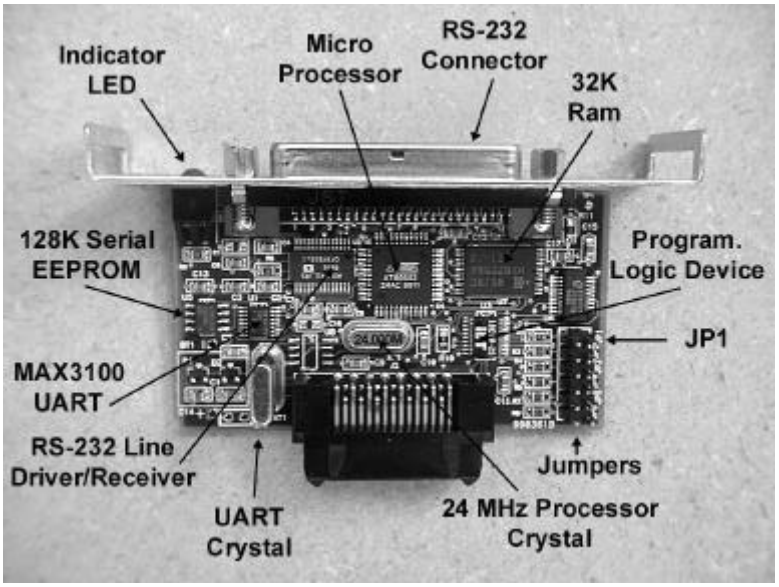
RS-232 / DB-25 Host Interface (Female)

Pin	Description	Pin	Description
1	Shell Ground	14	n/c
2	TXD from Printer	15	n/c
3	RXD to Printer	16	n/c
4	RTS from Printer	17	n/c
5	n/c	18	n/c
6	DSR to Printer	19	n/c
7	Ground	20	DTR from Printer
8	n/c	21	n/c
9	n/c	22	n/c
10	n/c	23	n/c
11	n/c	24	n/c
12	n/c	25	Reset to Printer
13	n/c		

2.3. SERIAL BUFFER II MODULE

This Utility program is intended to operate with the Serial Buffer II Module configured as a large buffer interface with an Epson POS printer.

Figure -2- Serial Buffer II Module Component Layout



2.4. EPSON POS PRINTERS

The type of Epson POS Printer and the Firmware version installed in the printer are retrieved and displayed by this program. The printer must support this communication function in the standardized form that was in existence at the time this program was written.

Table – 2 - Supported Epson POS Printers

Dip Switch settings on the Epson TM-U200:

Switch	Function	Position
1-2	Receive buffer	OFF (1K bytes)
1-3	Handshaking	OFF (DTR/DSR)
1-4	Word Length	OFF (8 bits)
1-5	Parity Check	OFF (No)
1-7	Baud Rate	OFF (9600)
2-3	I/F pin 6 reset	OFF (Disabled)

Dip switch settings on the Epson TM-T88; TM-H5000; & TM-U235

Switch	Function	Position
1-2	Receive buffer	OFF (4K bytes)
1-3	Handshaking	OFF (DTR/DSR)
1-4	Word Length	OFF (8 bits)
1-5	Parity Check	OFF (Disabled)
1-7	Baud Rate	ON (9600)
1-8	Baud Rate	OFF (9600)
2-7	I/F pin 6 reset	OFF (Disabled)

3. UTILITY PROGRAM USAGE

3.1. STARTING PROGRAM

Insert the program floppy disk (3½" Floppy) into the disk drive. If the program has been copied to a different drive, substitute the drive and path information in place of 'A:\'. The Current version of the Utility Program is 1.2 - Filename is SBM2_12.EXE . To execute the utility program:

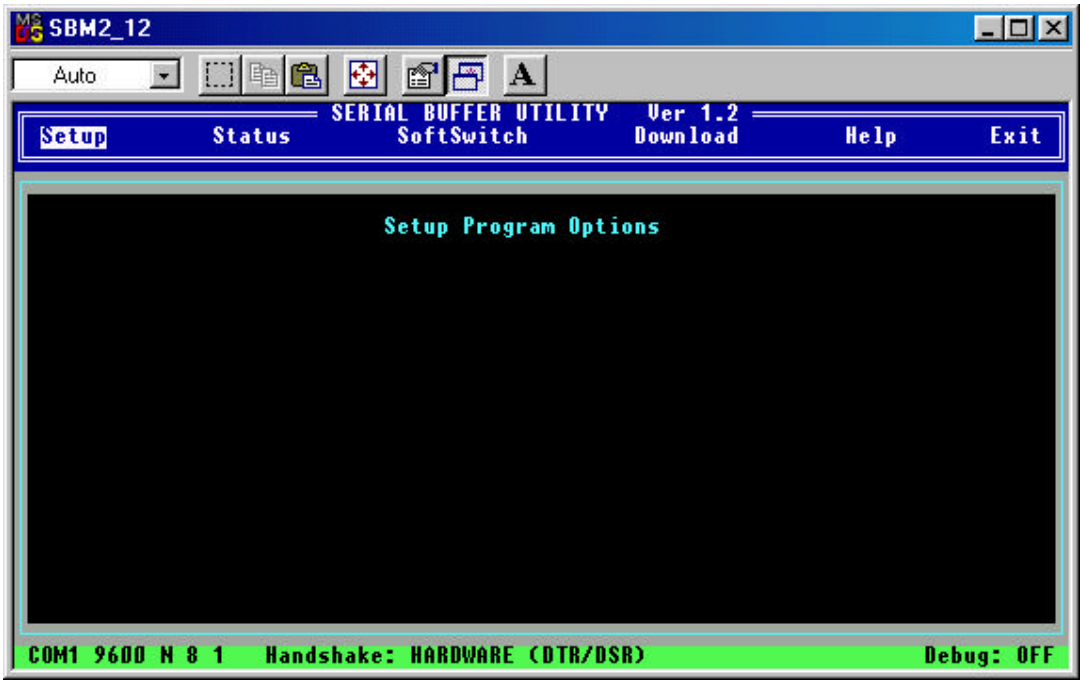
3.1.1. From the DOS prompt, enter A:\SBM2_12.EXE and press <Enter>

3.1.2. From Windows Explorer select the A: Drive and double click on SBM2_12.EXE.

3.2. MENU SELECTION

A menu bar will be displayed at the top of the DOS window/screen. In addition, there will also be a status bar at the bottom of the DOS window displaying the communication parameters currently being used by the computer for communications with the module.

Figure – 3 – Initial Menu Selection Screen

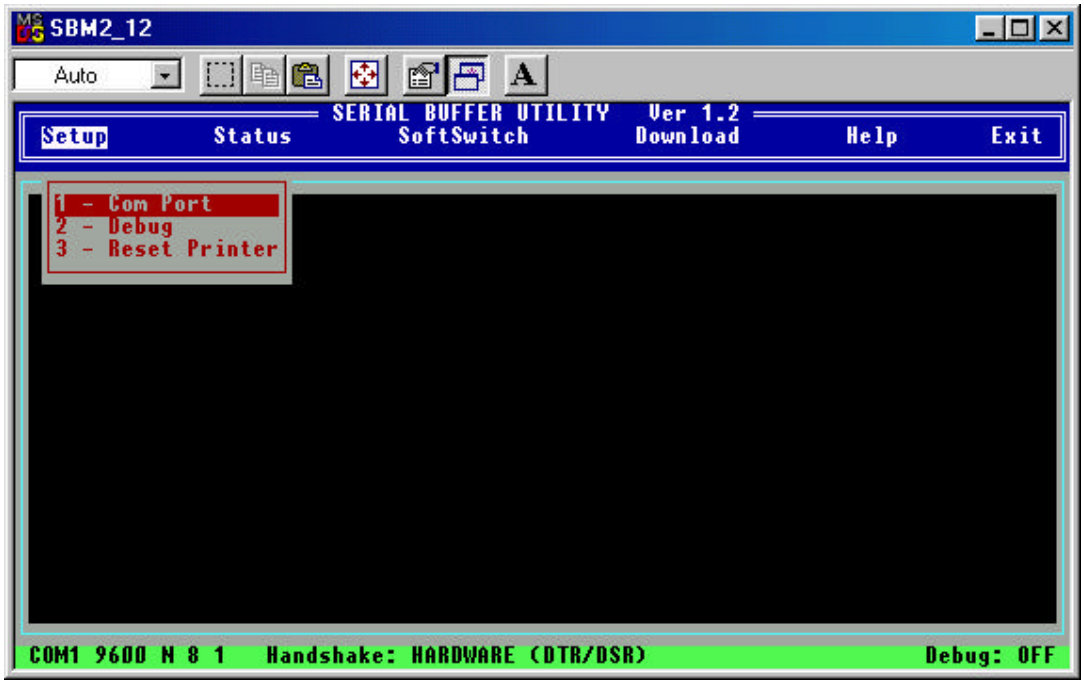


The user is presented with 6 dropdown menu items:

3.2.1. SETUP

The first item to select to make sure that the Host Computer has the correct COM Port selected, and that it is properly configured to communications with the module and printer.

Figure – 4 – Setup Menu Choices



3.2.1.1. COM Port Parameters

COM Port setup is for configuring the host computer for communications with the Serial Buffer Module – Figure – 5. The ESC Key is used to exit this menu system. The parameters currently selected will be saved.

3.2.1.1.1. Com Port

Selection of COM 1 or COM 2. Additional COM Ports may be supported in later versions.

3.2.1.1.2. Baud Rate

Selectable communication rate of between 300 and 34.8K baud.

3.2.1.1.3. Parity

Odd, Even or no Parity checking.

3.2.1.1.4. Data Bits

Number of Data bits: 7 or 8.

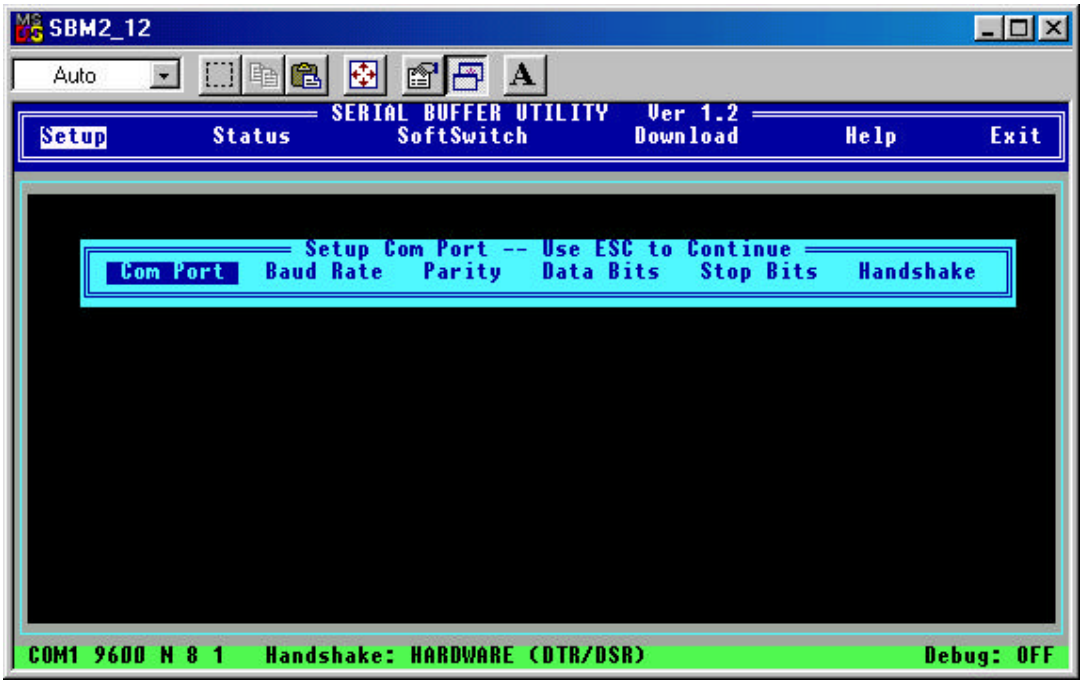
3.2.1.1.5. Stop Bits

Number of Stop Bits: 1 or 2.

3.2.1.1.6. Handshake

Selects Hardware, Software or no type of Handshaking between the computer and the module.

Figure – 5 – Setup COM Port Menu Choice



3.2.1.2. Debug

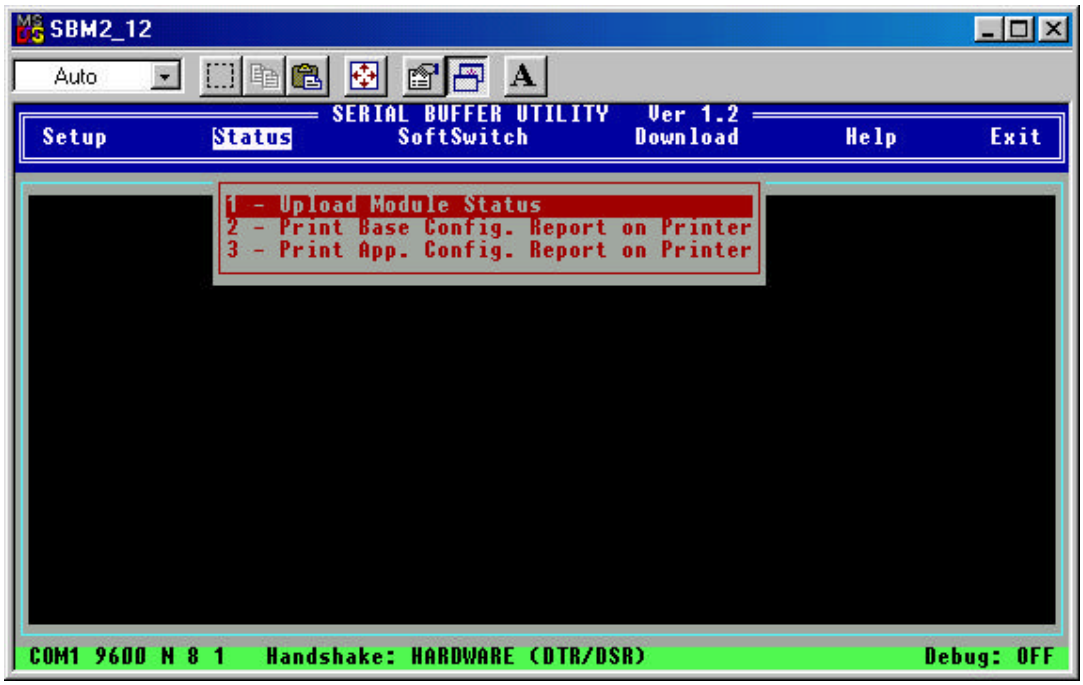
Software switch that enables or disables the hex string of information to be added to the display when the Status of the Module (3.2.2.1) is displayed.

3.2.1.3. Reset the Printer

Sends a reset to the printer.

3.2.2. STATUS

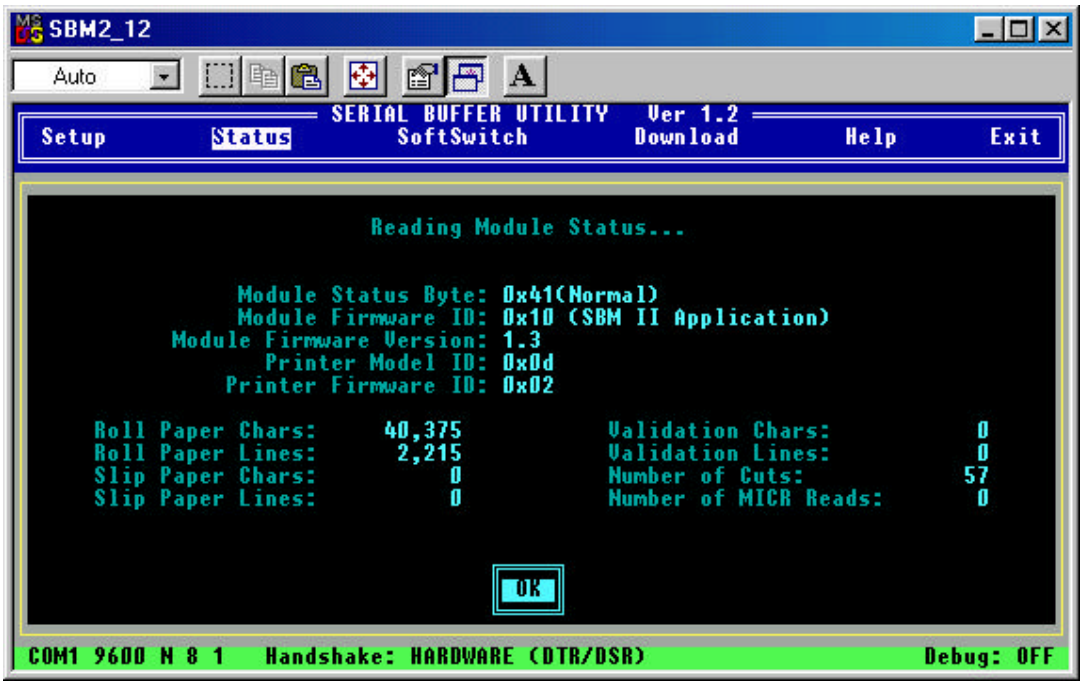
Figure – 6 – Status Menu Selection Choices



3.2.2.1. Module Status

Polls module for information about the module, and about the maintenance counts for the printer that is attached. This function will return an error message if it cannot find (communicate with) the module on the selected COM Port. If the Debug command (3.2.1.2) has been turned on, the Hex string will also be displayed.

Figure – 7 – Module Status Display Screen Example



3.2.2.2. Print Base Config. Report on Printer

Forces the Printer/Module into Base mode if required, and then causes the printer to print the Base Mode Configuration Report.

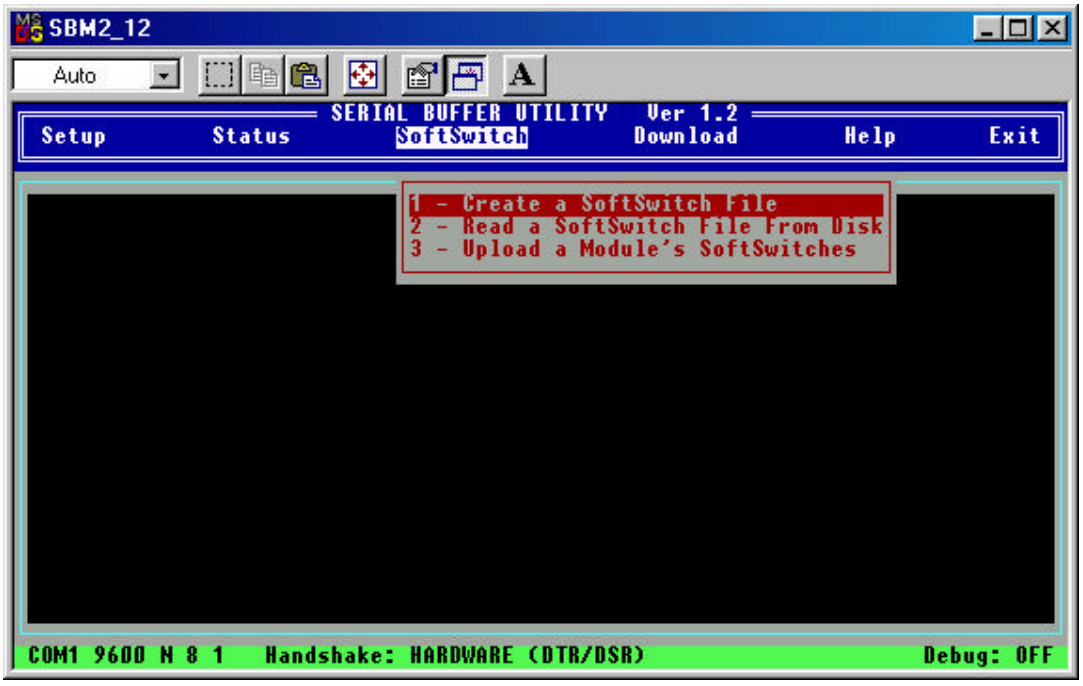
3.2.2.3. Print App. Config. Report on Printer

The Printer/Module loads the available Application Program and prints the Application Mode Configuration Report. If no Application Program is in the module, the Base Mode Report will print.

3.2.3. SOFTSWITCH

SoftSwitches are communication parameters on the module that are changeable by programming from the host computer. Several different parameters can be changed and either applied directly, or saved for future use. Also review section 3.2.4.6 for additional information on when SoftSwitch might be ignored or cause communication problems.

Figure – 8 – Control SoftSwitch Selection Menu Choices



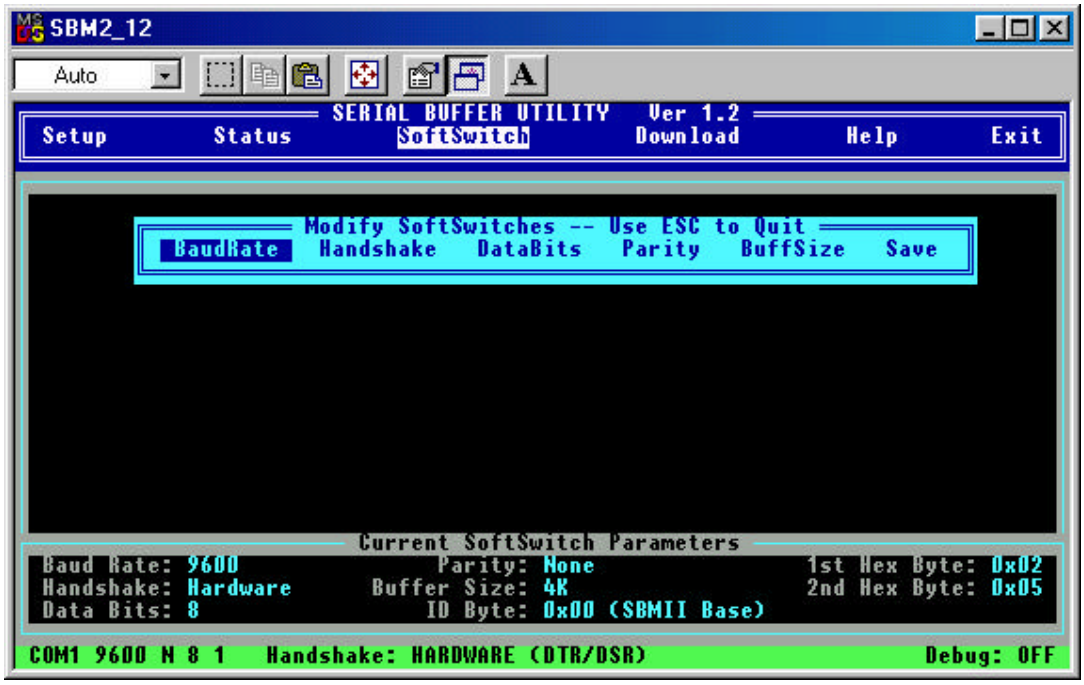
3.2.3.1. Create a New SoftSwitch File

When this option is selected, a box at the bottom of the window appears with the last used or default communication parameters, along with the Module Firmware ID information. The two Hex bytes are also displayed as a means of verification.

A Menu is also displayed for individual modification or creation of the communication parameters. Once selections have been completed, selecting the Save Menu Item (3.2.3.1.2) provides the options of downloading to the printer (3.2.3.1.2.1) or saving to disk (3.2.3.1.2.2).

See Figure – 9 – For an example of the Parameter Display and the Menu Choices for changing them.

Figure – 9 – Create SoftSwitch File Menu Choices and Parameter Display



3.2.3.1.1. Menu

3.2.3.1.1.1. *Baud Rate*

Selection provides for rates between 300 and 38.4K baud.

3.2.3.1.1.2. *Handshaking*

Selection of Hardware or Software protocol.

3.2.3.1.1.3. *Data Bits*

Total Data bits – Either 7 or 8 bits

3.2.3.1.1.4. *Parity*

Even, Odd, or None (no Parity) are selctable.

3.2.3.1.1.5. *Buffer Size*

Selectable Sizes from 1K to 24K, in increments of 4K, with an additional selection of a 2K value.

3.2.3.1.1.6. *Save*

Download to Printer
Save to Disk File

3.2.3.1.2. Save Menu Selection

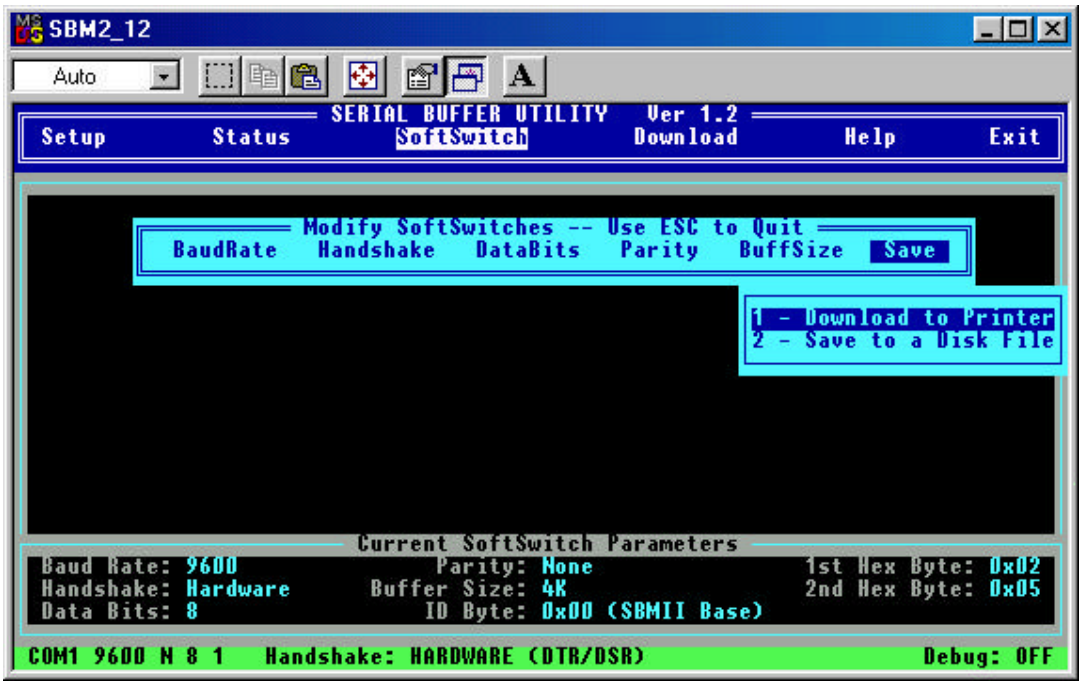
3.2.3.1.2.1. Download Parameters to Printer (Module)

Downloads the parameters currently displayed in the box to the module. Also review section 3.2.4.6.

3.2.3.1.2.2. Save Parameters in a Disk File

Prompts the user for a full path, filename, and extension for where to save the communication parameters. Different files may be created and later used.

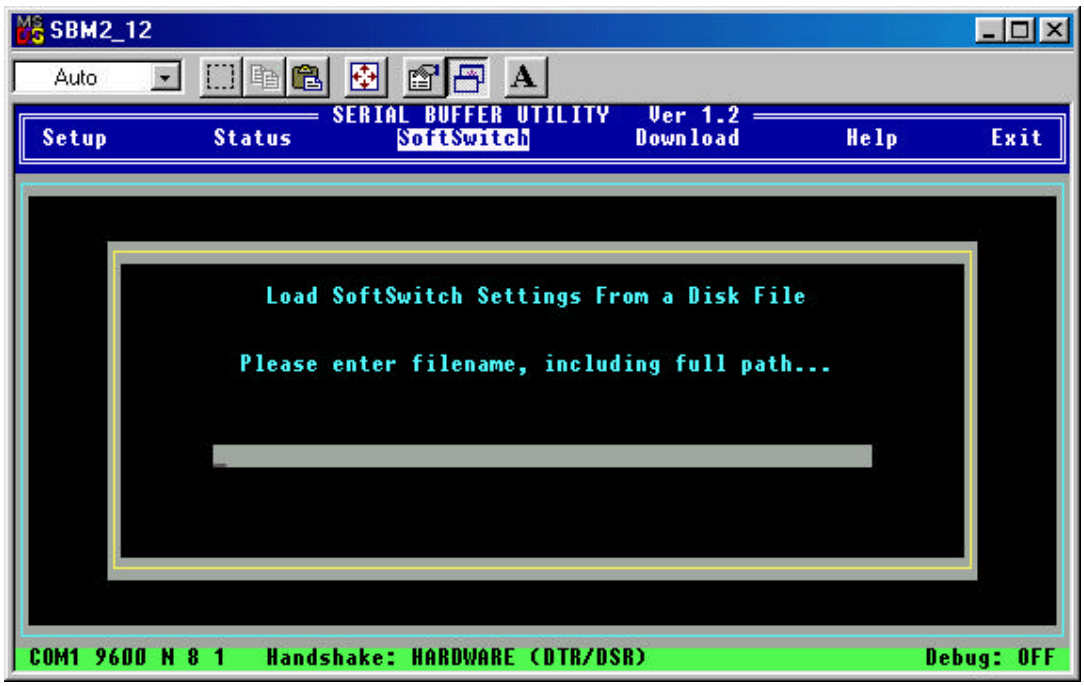
Figure – 10 – Menu Choices After Creation of SoftSwitch File



3.2.3.2. Load a SoftSwitch File From Disk

Prompts the user for the full path and filename of a file that has SoftSwitch parameters saved. If this was selected in error, and the user does not want to load a file from disk, <Enter> a blank – This results in an error message and returns to the Main Menu. The Esc Key does not work at this screen. See Figure – 11.

Figure – 11 – Entry Screen for Location of SoftSwitch File to Load



3.2.3.3. Read a Module's SoftSwitches

The program uses the existing communications parameters created in the Main Menu selection 'Setup' to read the Module's SoftSwitch settings. This could be used as a verification of correctly set parameters, or it could be used to set the correct values within the memory of the host computer and subsequently to program additional modules. Also see section 3.2.4.6 for a possible communications conflict.

3.2.4. DOWNLOAD

The “Download” dropdown menu will provide the following choices: Please also refer to Figure - 12, below. NOTE: If a file isn’t found, an error message will be displayed – Press <Enter> to continue.

3.2.4.1. Module Application File

Selection allows the downloading of a Module Application file to the SBMII. User is prompted for a ‘drive:\path\filename.ext’, on the host computer, which has the application program for the SBMII. The file will be loaded into memory and then downloaded to the Module. There is no specific naming convention requirement for either the filename or the extension.

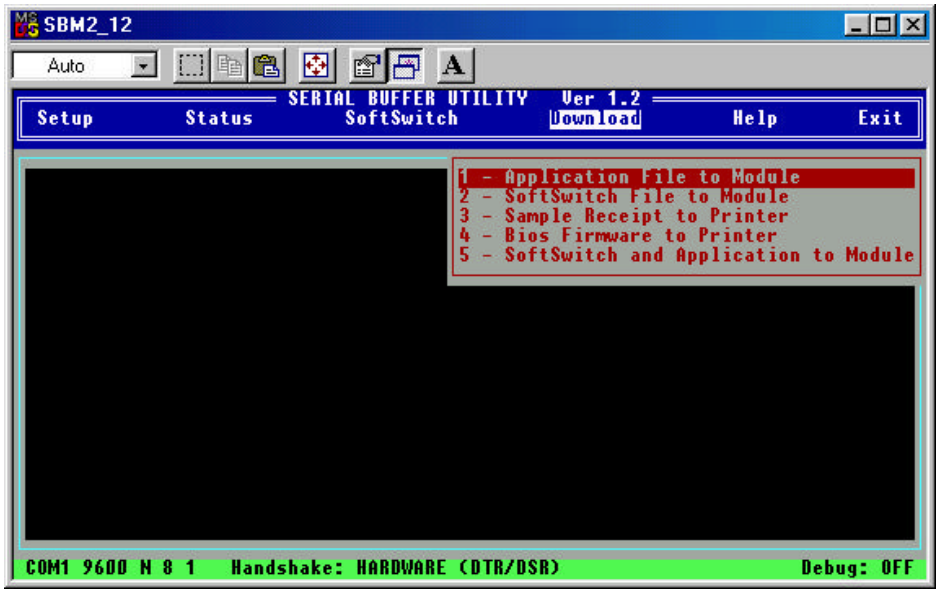
After invoking and entering the path and filename information the first time, and successful execution, the program will prompt: “Download File Again? Y/N”. If ‘Y’ is selected, the program will download the file again. If ‘N’ is selected, the user is returned to the ‘Download’ Menu Selection.

3.2.4.2. Module SoftSwitch File

Selection allows the downloading of the SoftSwitch parameters to the Module. User is prompted for a ‘drive:\path\filename.ext’. There is no specific naming convention requirement for either the filename or the extension. However, the program will verify that the file is a valid SoftSwitch file.

After invoking and entering the path and filename information the first time, and successful execution, the program will prompt: “Download File Again? Y/N”. If ‘Y’ is selected, the program will download the file again. If ‘N’ is selected, the user is returned to the ‘Download’ Menu Selection.

Figure – 12- Download Menu Selection Choices



3.2.4.3. Sample Receipt

Selecting this item prints a small sample receipt. This will test the system's communication setup.

3.2.4.4. Printer BIOS Firmware

Future feature of this program.

3.2.4.5. SoftSwitch and Application to Module

This function is usually used by the manufacturing production team to repetitively install the application to new boards. After invoking and entering the path and filename information the first time, and successful execution, the program will prompt: "Download File Again? Y/N". If 'Y' is selected, the program will download the file again. If 'N' is selected, the user is returned to the 'Download' Menu Selection.

3.2.4.6. Possible Problems After Downloading Application

If communications are lost after downloading a new Applications Program, the printer will have to run the diagnostic routine by opening the paper door, pressing linefeed, and closing the door. This will show the current communications parameters. Communication parameters on either the module or the COM port will have to be changed to the same values.

This situation could occur if there were NO Application Program loaded into the module and SoftSwitch values were downloaded to the module. The module will stay in Base mode, and in Base mode it will not read / use the SoftSwitch values. If the SoftSwitch values on the module have been changed, and an Application Program is downloaded to it, the Application Program will read the SoftSwitch values and use them. This could cause a communication mismatch.

3.2.5. HELP

Version and Documentation information are shown here. Directions on finding more information and a contact person are also listed.

3.2.6. EXIT

Quit the program.

3.3. USAGE SUGGESTIONS, TECHNIQUES, AND LIMITATIONS

3.3.1. If using the program in a Windows environment, mouse support is provided.

3.3.2. The Alt key + shortcuts are not available for use in this program.

3.3.3. The ESC key will return your position back one level on the menu system.

3.3.4. As noted in various selections, the ESC key can also be the ‘execution’ command key. When this command sequence is used in this method, the user will be informed and prompted by on-screen information.

3.3.5. Pressing the <Enter> Key will ‘dropdown’ the menu selections from the main menu bar.

3.3.6. Pressing the <Enter> Key at a selection item of the dropdown menu will execute that command or process.