

Simple Terminal Emulator

SimpTerm

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*This product designed and manufactured in Ottawa, Illinois
of domestic and imported parts by*

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1.0 GENERAL INFORMATION

1.1 Disclaimer of Warranty

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If you register for a license you are eligible for assistance from our technical support team and will be granted one free upgrade of SimpTerm. You can register SimpTerm by phone, fax, E-Mail, or by mail. The information is listed as follows:

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1.3 Introduction

SimpTerm is a shareware software package that assists users in solving serial communication problems. Some of the features included in SimpTerm are:

- * Up to four ports can be opened at a time
- * Any hardware supported baud rate
- * RS-232/RS-485 support
- * Handshaking control
- * Loop back tests
- * Triggers
- * Monitor Mode which monitors communications between a DTE and a DCE device. This feature requires the 232MMA monitor mode adapter (see 3.33).

1.4 Installation

To install SimpTerm, place the 3.5" floppy disk in your floppy drive and type A:\INSTALL (or B:\INSTALL, depending on which drive you inserted the disk into) and follow the installation directions. Then, to execute SimpTerm, just type SIMPTERM from the directory in which you installed it.

2.0 SCREEN LAYOUT

2.1 Main Menu

The Main Menu is located on the top line of the screen. It allows you to access all the features of SimpTerm. It is accessed by pressing ALT+"highlight char". Then the right/left arrow keys are used to move to the next/previous menu while the down/up keys are used to move to the next/previous menu items. Some of the menu items have a key or key sequence to the right of the option. This is a hot key that can be used at any time to access that menu function.

2.2 Terminal Screen

This is the area where all the characters that are transmitted and received are displayed. On color monitors the transmit characters are displayed in yellow and the receive characters in cyan. On black and white monitors the transmit characters are displayed in white and the receive characters in gray. If an Overrun Error, Parity Error, Framing Error, or Break Interrupt is detected, the character will be blinking (see the Handshake Line section). When a port is in split mode (see Display | Split), a horizontal line will be splitting the terminal screen in which the transmit characters (DTE side) will be displayed in the upper half, and the receive characters (DCE side) will be displayed in the lower half.

A 45 line ring buffer is maintained for each of the ports opened.

2.3 Setup Window

This window is located on the right side of the Terminal Screen when the Settings option is selected (see Display | Settings). This is used for a constant reminder of the ports settings.

2.4 Handshake Line

The Handshake Line is located on the bottom of each of the opened ports and is split up into four sections.

The first is the "DTE:" section. This section displays the state of the handshakes DTR - Data Terminal Ready, RTS - Request to Send, and BRK-Break.

The second section is the "DCE:" section. This section displays the state of DSR - Data Set Ready, CTS - Clear to Send, DCD - Data Carrier Detect, and RI - Ring Indicator.

The third section is the state of the error flags. This displays the state of BRK - Break, OE - Overrun Error, PE - Parity Error, and FE - Framing Error. If one or more of these errors occur on a receive character, the state will be set until the next receive or transmit character is displayed.

The fourth section is the current size of the Transmit "TXB:" and Receive "RXB:" buffers.

For all of these flags, when the state is found to be "high", the representation characters will be displayed with a gray background with a black foreground, otherwise they will be displayed with a black background and a gray foreground.

3.0 USER'S GUIDE

3.1 Port Menu

3.11 Port | Open

Allows the user to open a single serial communications port.

An "Address, IRQ, Transmit Buffer Size, and Receive Buffer Size," is required to install a port. The address is the location of the port, and the IRQ is the interrupt request line that the port will be operating under. Some of the more common addresses: 03F8h, 02F8h, 03E8h, and 02E8h are the usual address for COM1-COM4 respectively, although any address through 3FFh may be specified. All IRQ's (2-15) are also supported.

The transmit and receive buffers are used as temporary holding areas for characters that are waiting to be transmitted and characters that are received before they can be placed on the screen. The larger the receive buffer the less chance there is to lose characters. The minimum size of the each of the transmit and receive buffers is 2 characters. The maximum size has to be less than the following:

$$(100 + (2 * \text{Receive Buffer}) + (\text{Transmit Buffer})) < 65535$$

For example, to determine the maximum receive buffer for a single port, you would use the following formula:

$$(\text{65435} - \text{Transmit Buffer Size}) / 2 = \text{Receive Buffer Size}$$

When a port is opened, it transmits a NULL to determine if the IRQ is set correctly.

3.12 Port | Close

Allows the user to close an existing port.

Any ports that are left open are automatically resized to fill the screen.

3.13 Port | Setup

This dialog box allows you to set up the communication parameters for the port.

3.14 Port | Change

This allows you to change a port's address, IRQ, receive buffer size, or transmit buffer size without losing any of the port's triggers, handshake settings, etc.

3.15 Port | Copy Settings

Copies the baud rate, parity, data bits, stop bits, triggers, and all the display settings from one port to another.

3.16 Port | Summary

Shows a summary of the active port.

The address, IRQ, transmit buffer size, receive buffer size, type of UART, and FIFO trigger level if the UART is a 16550AFN. The type of UARTs that are supported are: 8250 or 8250B, 8250A or 16450, 16550, or 16550AFN.

3.17 Port | Exit

Exits SimpTerm.

If a configuration file is open and changes have been made since it has been open, you will be prompted to save the changes before exiting. If no configuration is open it will just exit.

3.2 Control Menu

3.21 Control | RTS

Toggles the state of Request to Send.

3.22 Control | DTR

Toggles the state of Data Terminal Ready.

3.23 Control | Break

Toggles the state of the Break condition. This condition is caused by holding the transmit data line high.

3.24 Control | Last

Toggles continuous transmit.

The character that is repeated could either be the last character that was typed (transmitted) or a string that was defined and transmitted.

3.25 Control | FIFO

If the UART is a 16550AFN then the FIFO trigger level can be set here. It is a good idea to change this only when the receive buffer is empty, otherwise characters could be lost.

3.26 Control | Clear RX_Buffer

If there are characters in the Receive Buffer they are cleared. Also, this option is used to clear the receive overflow flag which, when set, is displayed on the handshake line as "OF".

3.27 Control | Clear TX_Buffer

If there are characters in the Transmit buffer they are cleared.

3.3 Options Menu

3.31 Options | Test Mode

Allows you to test a serial port or external device by either looping back on itself pins 2 and 3 (transmit and receive) or by connecting one port to another by configuring one as a DCE device.

If two ports are being used in test mode, then the active port transmits characters while the second port receives.

3.32 Options | Set Trigger

A trigger is defined as a string that is looked for while a port is receiving characters. If this string is detected, a second defined string is then transmitted out the port as a reply to the trigger.

In the Set Trigger Dialog Box you can set up to nine Triggers and Reply strings. Each of these combinations can be enabled/disabled separately by the check box preceding them. There is also a check box labeled "[] Enable Port ? Triggers" that allows you to enable/disable all of the separately enabled triggers. For example, if this check box is not checked, all of the defined triggers that are enabled (have a check preceding their trigger and reply string) will now be disabled.

There is also a check box labeled "[] Make Global" which makes all of that port's defined triggers set for all of the other ports that have their corresponding "[] Enable Port ? Triggers" checked.

You can also define decimal values in both the Trigger and Reply string edit boxes by specifying a hexadecimal number between braces (< >). For example, <0> would transmit (or look for) a NULL.

3.33 Options | Monitor Mode

Allows you to monitor communications between a DTE and DCE.

This feature requires an external piece of hardware as well as two ports being open at a time. This piece of hardware can be purchased from B&B Electronics (Model 232MMA) for \$34.95, or can be constructed by yourself. The cable requires the pinouts in diagram A.1.

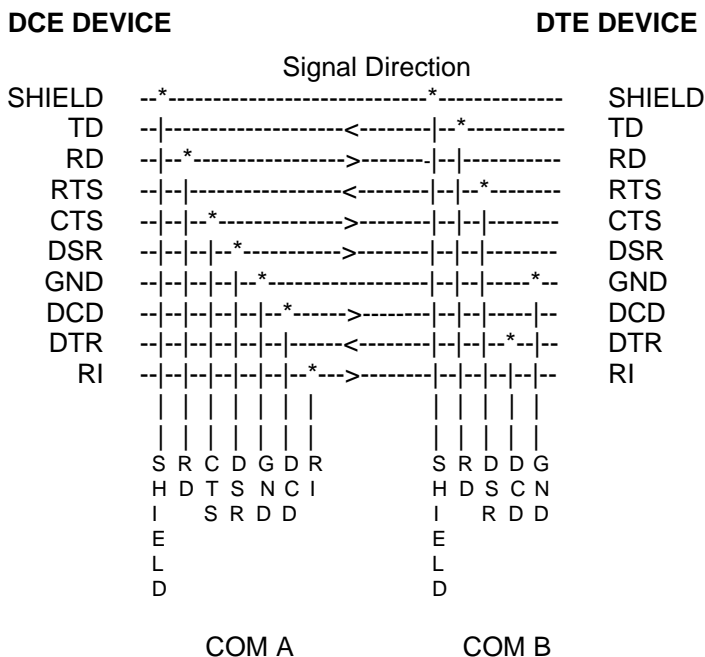


Diagram A.1
Pinouts for the Monitor Mode Adapter

COM A and COM B connect to the SimpTerm ports that you have opened. COM A monitors the DCE side and COM B monitors the DTE side.

When this mode is started, if two ports are not currently open, it prompts you to open a second port. Then a dialog box comes up that looks similar to the following:

| | |
|--|--|
| COM B (DTE) | COM A (DCE) |
| <input checked="" type="checkbox"/> Port 1 | <input type="checkbox"/> Port 1 |
| <input type="checkbox"/> Port 2 | <input checked="" type="checkbox"/> Port 2 |

Here you tell SimpTerm which port will be monitoring the DTE side (connected to COM B) and which port will be monitoring the DCE side (connected to COM A). The number of ports listed in the dialog box will correspond to the number of ports you have open. After you select both of the ports you wish to do the monitoring, any leftover ports will be closed automatically.

If either of the two ports selected have a 16550AFN type UART you will be prompted to disable the triggers.

RS-422 communications can also be supported by purchasing a 422BOC cable from B&B Electronics for \$74.95.

3.34 Options | Define String

There are nine hot keys that are available to assign to user defined strings. Here strings can be set up that will be transmitted by pressing the hot key assigned to it. Hexadecimal numbers can be specified by placing them between "<>". For example to transmit a NULL you could set up one string like the following, <0>.

3.35 Options | Log to File

This is a toggle switch which logs all transmitted and received data to a file. If the Character Display (see Display | Character) is selected, only the characters that are transmitted and displayed will be displayed. In other words, you will not be able to distinguish between transmit and receive characters. If any other option is selected in Character Display, a "{T}" will be placed preceding the first character transmitted and a "{R}" will precede the first character received. Logging to a file can be turned off by selecting it a second time.

3.36 Options | Transmit File

This is a toggle switch that once selected will transmit a complete file or will transmit until it is selected again which will cancel transmitting.

3.4 Display Menu

3.41 Display | Clear

Clears the current port's screen as well as the display buffer.

3.42 Display | Split

This is a toggle switch that splits the current port's screen. When the screen is split, all the transmit characters will be displayed on the top half of the screen and all the receive characters will be displayed on the bottom half. Otherwise it is in full screen mode, where all the transmit and receive characters will be combined.

3.43 Display | Settings

Turns the display of the port settings on and off. If display port settings is off the terminal screen will expand to the full width of the screen.

3.44 Display | Character

Allows you to select the character display mode.

There are four options, Character, Hex, Decimal, and Mix. In character mode the actual character will be placed on the screen. In Hex, a hexadecimal representation of the character will be displayed in between "<>". In decimal a decimal representation of the character will be displayed between "<<>>". In mix mode all characters between 32 decimal and 126 decimal will be displayed as its character and the rest will be displayed between "<>" as a hexadecimal representation. The check box "Change All Ports" located on the bottom of the dialog will change the display character for all the ports open.

3.45 Display | Show/Hide

This option allows you to temporarily hide a port. This feature would be used if you have more than one port open and you require more display for a particular port. When a port is hidden, all receive characters will be stored and will be displayed when the port is brought back to its visible state.

3.46 Display | 43/50 Lines

Toggles between 25 and 43/50 line displays.

3.5 Config Menu

3.51 Config | Load

Loads a configuration file.

3.52 Config | Save

Saves a configuration file.

If a configuration is not currently open, a dialog box will come up for you to specify a name for the file. The default directory is the directory where SimpTerm is located. If a configuration file is currently open, it saves the current settings to the file.

3.53 Config | Save As

Saves the current configuration file to a user supplied name.

The default directory is the directory SimpTerm is located in.

3.54 Config | About

Displays copyright notice and version number.

4.0 SimpTerm Version 1.0 Mail-In Registration

Mail to: B&B Electronics Mfg. Co.
P.O. Box 1040
Ottawa IL, 61350

Or mail to: B&B Electronics Ltd
Unit 10, Westlink Commercial Park
Oranmore, Co. Galway, Ireland

Name: _____

Title: _____

Company: _____

Address: _____

City, State, Zip: _____

Phone number: _____

I want to become a registered user of SimpTerm version 1.00.

I request ____ copies of SimpTerm 1.00, a printed SimpTerm manual for each.

(To Illinois USA residents: As a licensed business in the state of Illinois we are required to charge 6.25 percent sales tax on sales made within the state. Please include the tax when you calculate the amount of your payment.)

I enclose a check or money order for \$_____.____ for ____ copies (including sales tax if applicable).

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