DSRTTY-Win

RTTY Terminal Software

OPERATOR'S
MANUAL

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Chapter 1
INTRODUCTION

1.1 The DSRTTY-Win Manual

DSRTTY-Win is a Windows serial port terminal application designed to control hardware for the use of communicating data. Usually this hardware is in the form of a modem. However, this software can be adapted to many situations where a terminal application designed for use with a serial port is required.

DSRTTY-Win is designed for use with Windows 95, 98, ME, and NT (service pack 4.0 and above) Operating Systems. The software is designed to work with newer releases of Windows as they become available. However, if installation fails or if the application is not performing correctly, please contact customer service (See Section 1.4).

This software is capable of transmitting and receiving two different character sets — Baudot and ASCII RTTY. Baudot is a five bit character set widely used in HF radio communications and is a specialized mode with a limited character set. All printable(1) ASCII characters are supported by DSRTTY-Win with two choices for the data set (7 and 8 bit) as well as all possible parity choices. Data rates are easily changed to quickly and accurately decode data.

1.2 DSRTTY-Win Software

The installation software for DSRTTY-Win includes a single 3.5 inch floppy disk. All of the files necessary to install this software are on this floppy disk.

1.3 Minimum Requirements

DSRTTY-Win is designed to require the minimum necessary requirements to run under the Windows Operating System. Typically, the minimum requirements are the same as the minimum requirements for the Windows Operating System. However, there are several issues that may affect performance, including other applications running at the same time as DSRTTY-Win.

Minimum Recommendations
Processor:	233MHz or above
RAM:	32MB or more
Floppy Drive:	1 - 3.5 inch disk drive
Hard Drive:	5MB available space*
Video:	SVGA monitor and adapter

* Note: Windows itself requires free hard disk space to run effectively. Take this into account when determining the space needed for DSRTTY-Win installation.

1.4 Software and Documentation Update

New versions of DSRTTY-Win and its documentation will be available for purchase from HAL Communications Corp. as released. DSRTTY-Win version and feature information is available from our website at www.hal-comm.com. Please, contact HAL Customer Service with any questions regarding DSRTTY-Win Updates.

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Chapter 2
INSTALLATION AND SETUP

This chapter discusses installing the DSRTTY-Win terminal application for Windows, the serial port connec - tions used by the terminal software, and a description for the manual conventions used. As introduced in sec- tion 1.1, DSRTTY-Win can be applied to several differrent settings for a serial port terminal application. The main use of this application will be the control of an external data modem for use with HF radio, preferably the HAL ST-8000A HF Modem. If this software is used for a different purpose, contact HAL Customer Service (see section 1.4) for support.

2.1 Unpacking and Inspection

The DSRTTY-Win terminal software package for Windows includes the following materials.

1 - 870-03201	DSRTTY-Win Manual
1 - 865-03201	DSRTTY-Win Installation Disk

When opening the DSRTTY-Win shipping carton, carefully inspect it for any evidence of shipping damage. Any damage should be immediately reported to your shipping carrier. Be sure to save any damaged packing mate- rials. Note that a damage claim must be filed by you with the shipping carrier — NOT HAL Communications. HAL will be glad to assist in such cases, but only the shipping carrier can pay claims.

Check to be sure that all of the materials listed above are contained in your DSRTTY-Win package. If you find any materials missing, please HAL Customer Service (see section 1.4) as soon as possible.

2.2 Software Installation

Installing DSRTTY-Win closely follows standard Windows installation procedures. Installing DSRTTY-Win is started by first obtaining the installation disk. Use the following steps to begin the installation procedure:

1. Turn on your PC.

2. Place DSRTTY-Win Disk into floppy drive **A:**.

3. Click the Start button on the Task bar and choose Run.

4. In the Run Dialog Box Type: **A:SETUP**

5. Click **OK**

6. The DSRTTY-Win Setup program will now begin.

2.2.1 The DSRTTY-Win Welcome Screen

The Welcome Screen is a friendly reminder that we are about to begin installing software on your computer. Read the warnings carefully and make sure you have closed all other applications currently running.

Begin installation by clicking **OK**
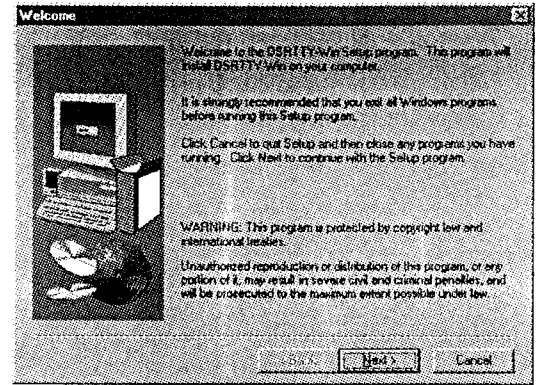
Figure 2.1

2.2.2 Software License Agreement

The Software License Agreement briefly states the rights of HAL Communications Corp. as the developer of this software. For more information on these rights, refer to Chapter 5, Agreements. Continue installation by clicking **Yes**.
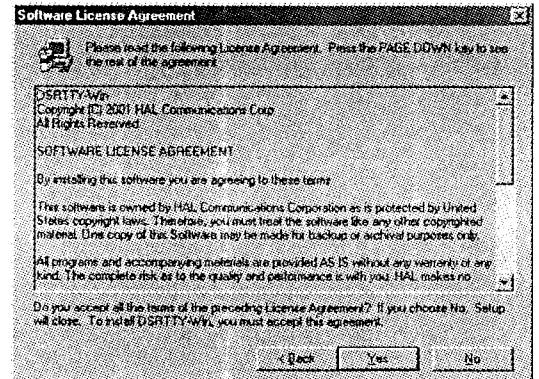
Figure 2.2

2.2.3 Choose Destination Directory

For standard installation, you do not have to change the installation directory. If you wish to install to a different drive or directory click **Browse**. You will be prompted to type a new directory and/or drive location. When finished, click **OK**.
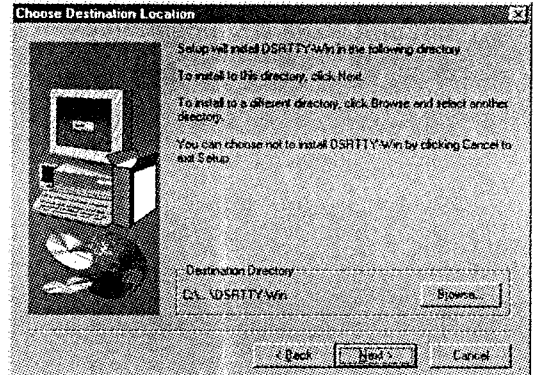
Figure 2.3

2.2.4 Select Program Folder

DSRTTY-Win now asks you to specify the location of the program icons. Click **Next** to select the default location or type in your own custom name and then click **Next**.
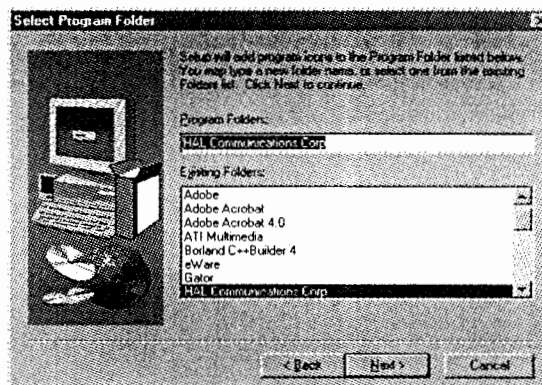
Figure 2.4

2.2.5 Start Copying Files

DSRTTY-Win Setup will now ask for you to review your previous choices before installing files. Choose **Back** to make any changes and **Next** to continue.
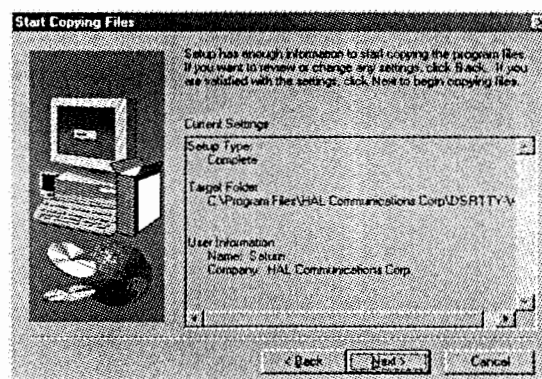
Figure 2.5

2.2.6 Progress Meter

DSRTTY-Win Setup will now display a progress meter during the installtion as it installs and registers the application.

At this point DSRTTY-Win is being installed on the system. To remove this application from the Windows operating system you must use the Windows Add/Remove utility. Please consult your Windows manual or help system for further information.
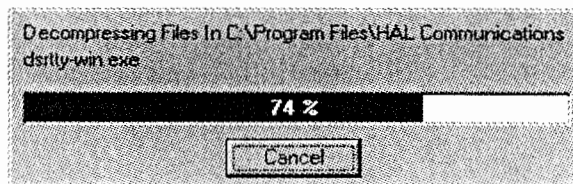
Figure 2.6

2.2.7 Setup Complete

The DSRTTY-Win Setup is complete.

To view the readme file or automatically launch the application check the appropriate check boxes.

To finish DSRTTY-Win Setup click **Finish**.
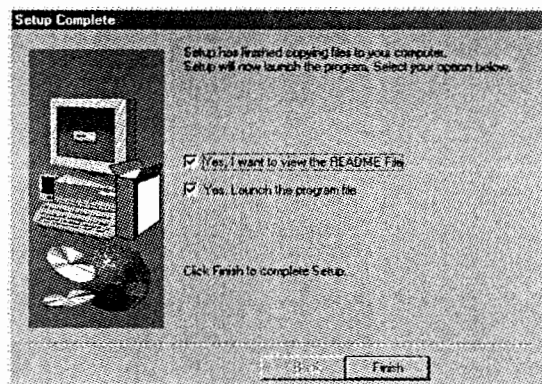
Figure 2.7

2.3 RS-232 Connections

All data connections to DSRTTY are made via a 9-pin or 25-pin RS-232 serial I/O connector. These connections follow industry standards. Please refer to Table 2.1 for serial (RS-232) cable requirements to interface the PC's serial I/O port and external device. Figure 2.8 shows the typical hardware connections used with DSRTTY-Win. Please, contact HAL Customer Support (see section 1.4) if you need assistance with the data connections to your modem.

9PIN	25PIN	LABEL	SIGNAL	DSRTTY-WIN OPERATION
1	8	DCD	Data Carrier Detect	Ignored
2	3	RXD	Receive Data	Demodulated Receive Data
3	2	TXD	Transmit Data	Data to be Transmitted
4	20	DTR	Data Terminal Ready	Set High = PC is Ready
5	7	GND	Ground	Ground
6	6	DSR	Data Set Ready	Ignored
7	4	RTS	Request to Send	PTT Control HIGH = TX, LOW = RX
8	5	CTS	Clear to Send	TXD Flow Control (Active or Ignored)
9	22	RI	Ring Indicator	Ignored

Table 2.1: PC RS-232 Data I/O Connections
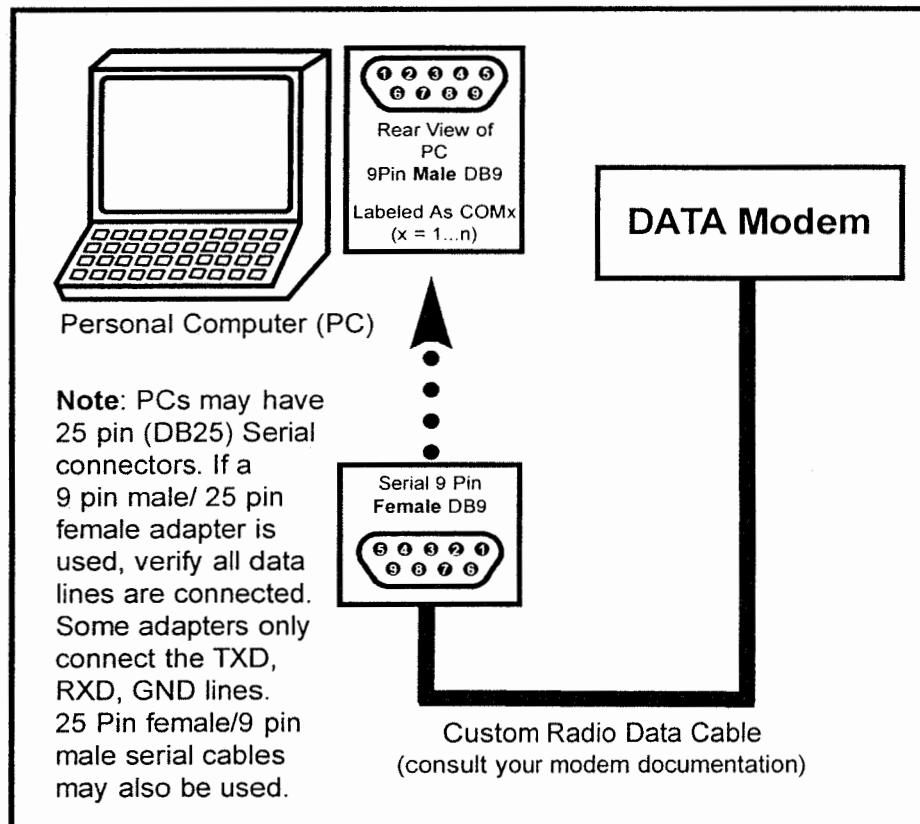
Figure 2.8: Typical Hardware Connections

2.4 Manual Conventions

2.4.1 Keystrokes

The following manual conventions describe the method of certain keystrokes.

> 1. All user-entered keystrokes or mouse clicks are in **BOLD** print.
>
> 2. Multi-letter keytop labels are shown in [BRACKETS].
>
> For example:
>
> **[ENTER], [F1], [F8], [Ctrl], [Alt], [Shift], [Home], [PgUp]**, etc. Each **[BRACKETED]** set represents <u>one</u> key to be pressed.
>
> 3. Some keys must be held down while pressing a second key. These will be shown with a dash (-) between key presses. The combination of these keypresses is also known as a hot key.
>
> For example: **[Alt]-C** should be interpreted as:
>
>> press and hold the **[Alt]** key
>> press and release the **C** key
>> release the **[Alt]** key

2.4.2 Special Manual Terms

The following are special key terms used through out this manual.

RTTY is used to generically describe data transmission with either the Baudot or ASCII character sets. These are sometimes specifically refered to as **Baudot RTTY** and **ASCII RTTY** seperately.

HotKey is used to define a series of keypresses to perform a certain action. A HotKey is most often used to enter text into the transmit buffer such as the time, date, callsign, etc.

Macro is used to define a special key sequence beginning with the % key. Macros are similar in function to a HotKey except they can be stored in a file as well as be entered into the transmit buffer.

Here-IS Messages are used to describe a series of stored messages that can be sent quickly from disk file with special HotKeys.

ASR / CONT is used to describe two methods for transmitting data - Auto Send and Receive or CONTinuous. ASR and CONT are used throughout this manual.

SYNC is used to describe when idle characters are sent to the other station. It helps the receiving station to mantain contact (sync) with the sending station.

USOS is used to describe a manual shifting of the character set in Baudot and is later described.

Other terms are defined in specific sections of this manual. Please contact HAL Customer Service (Section 1.4) if you have any questions regarding the use of any specific terms used in this manual.

Chapter 3

USER INTERFACE

This Chapter describes each area of the DSRTTY-Win user interface. The user interface describes all of the visual aspects of the software including the menu, buffers, tool bars, etc. and the various options for each item. Items not discussed here will be covered in Chapter 4, Operation. If you are very familiar with the use of RTTY terminals then you might choose to skim this chapter and get started immediately.
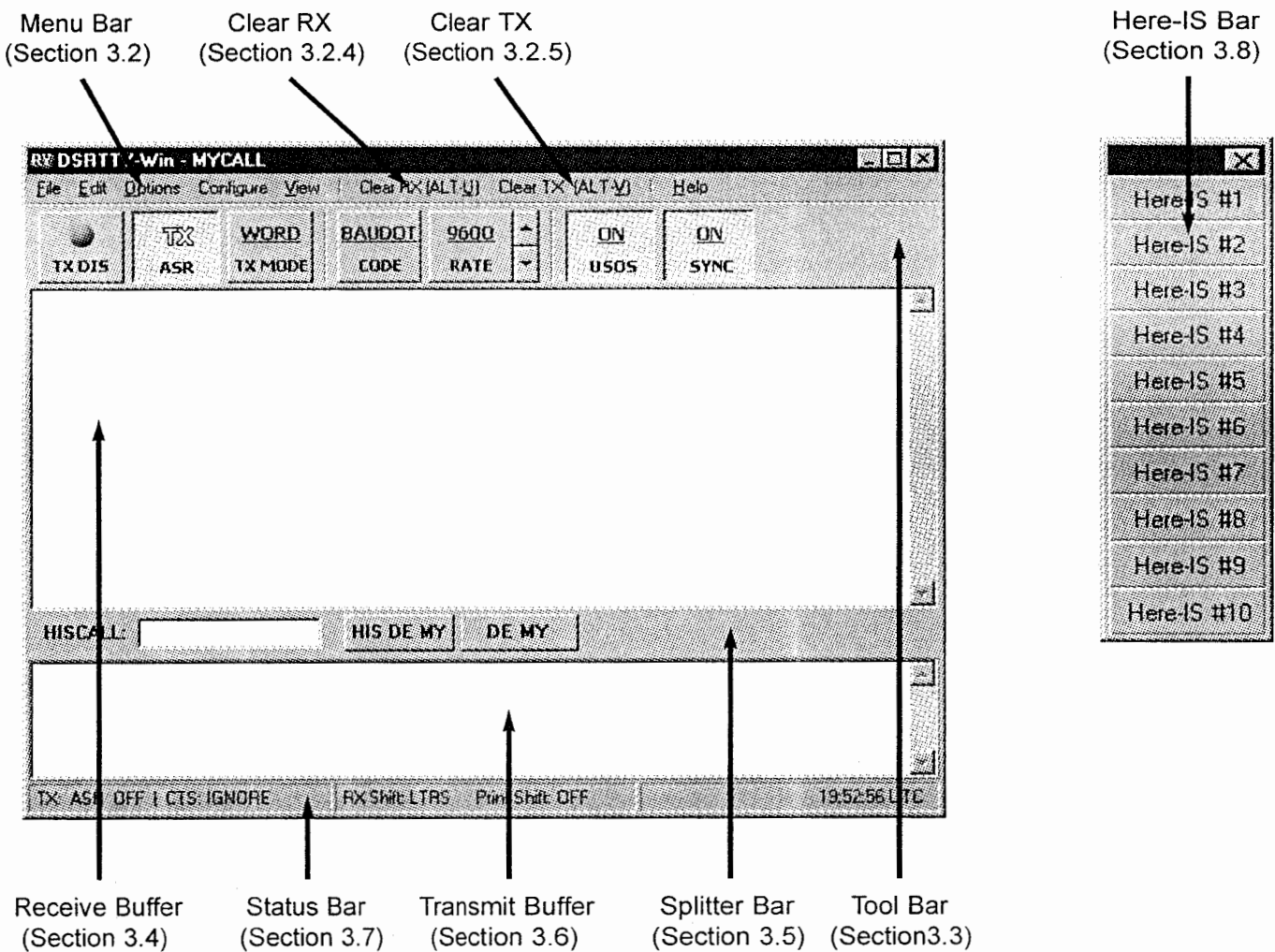
3.1 DSRTTY-Win User Interface

Figure 3.1: User Interface

3.2 Menu Bar

The **Menu Bar** displays the features that are available in DSRTTY-Win. The typical convention used in Windows menu bars is to underline the special HotKey that is used to display the submenu of items on the menu. The **Menu Bar** has seven main menu choices each with submenus.

3.2.1 File

The **File** menu item contains file options for saving and reading files, printing the receive data, as well as closing down the application.

Save Receive prompts the user for file and directory information using the standard windows Save Dialog Box. The entire contents of the receive buffer are then saved to the file specified.

Save Continuous also prompts the user for a file name. DSRTTY-Win will save new receive data to this file until this option is stopped (or turned off).

Load Transmit prompts the user for a file name and adds the contents of the file to the transmit buffer.

Send Text File sends characters directly from a disk file. A special dialog box is displayed to show the progress of the file transfer. Choosing Cancel will terminate this file transfer.

Print Receive opens a printer dialog to select a windows printer and send the contents of the receive buffer to the printer.

Exit displays an exit dialog to save the current settings for the application. Click **Yes** or **No**. Clicking **Cancel** will disregard the request to terminate the application.

Note: It may seem odd to exit DSRTTY-Win by accessing the File menu. However, this follows standard Windows convention.

3.2.2 Edit

The **Edit** menu item contains commands used when editing text.

Cut (Ctrl+X) deletes the selected text and stores it in the Windows clipboard.

Copy (Ctrl+C) stores the currently selected text in the Windows clipboard.

Paste (Ctrl+V) inserts the contents of the Windows clipboard at the cursor.

Delete (Ctrl+Del) deletes the currently selected text.

3.2.3 Options

The **Options** menu displays the current state of several options available when using DSRTTY-Win. A common feature of Windows is to allow the user to change options within an application several different ways. You will find that when we discuss the Tool Bar in section 3.3 all of these items will be repeated. To minimize repeating the same information, better descriptions will be listed here with reference to this section placed in the Tool Bar section.

Code (ALT-F1) displays submenu items ASCII and Baudot to select the current character set used. The current code used will be displayed with a check mark as the indicator.

Note: Changing the code also changes the serial port configuration.

Rate (ALT-F2) displays a submenu of the serial port data rate options with the current rate checked.

TX Mode (ALT-F7) displays a submenu of the transmit buffer options for sending characters from the transmit buffer. These options are Character, Word, and Line. Character mode will send a character as it is typed. Word mode will send a word at a time when the next word is typed, or upon an **[Enter]** keypress. Line mode sends the contents of an entire line at a time, when the next line is begun.

USOS (ALT-F3) changes the shift state of the receive buffer to LTRS after receiving a space character during a Baudot RTTY transmission. When USOS is enabled the USOS menu item is checked.

SYNC (ALT-F8) allows for the transmit of idle characters when transmit data is not pending and when the transmit buffer is enabled. When SYNC is enabled the menu item is checked.

ASR (ALT-F9) changes one of the transmit states of the transmit buffer. When ASR is enabled the transmit buffer will toggle the PTT line independently of the state of TX En (Transmit Enable). PTT is set to TX only when data is pending to be sent from the serial port. And, PTT is set to RX when data is no longer pending for the serial port. If ASR is enabled, the menu item is checked. If ASR is not enabled, the state is refered to as continuous (CONT). In CONT, the PTT state is the state of Transmit Enable (ON = TX). ASR is further discussed in section 4.2.2.

TX EN (ALT-F10) enables or disables the transmit buffer. When the transmit buffer is enabled, the final state of the transmit buffer is actually dependent upon the state of ASR, SYNC and whether data is pending to be sent. When the transmit buffer is enabled, this menu item is checked.

3.2.4 Configure

The **Configure** menu item is designed to provide easy access to several of the configurable options in DSRTTY-Win. These configuration changes can be saved when exiting the application. Most of these selections will display a secondary window for configuration choices. To return to the main screen of DSRTTY-Win, just close these secondary windows.

Fonts will display a configuration screen (see Figure 3.2). You may choose to edit most of the font types, colors, and sizes as well as choose colors for the colors of the transmit and receive buffers.

MyCall will display a simple dialog box (see Figure 3.3) to enter a callsign for 'this' station. MyCall can be changed at any time.

Note: Macros have not been discussed yet, but MYCALL is an excellent example of when macros are useful. %M defines the mycall maco. When sending a file that uses the %M macro, mycall will always be transmitted correctly no matter how many times mycall is changed. Macros are listed in Table 4.4, Section 4.1.4.

ASCII displays the ASCII RTTY options (Figure 3.4). These options allow for the Bit and Parity to be changed in the PC serial port hardware.

Baudot displays the two character set options: U.S. Baudot and ITA #2.

Port allows the ability to change the PC serial port hardware device that we are currently controlling. A list of currently supported ports is displayed.

CTS displays a submenu with the options of either Ignoring the CTS (Clear To Send) serial port status line or Actively watching the line for changes. Active will adjust the state of the transmit buffer depending on the status of the line.

Echo displays the current state of the receive buffer echo as sent option. When Echo is enabled text will be displayed in the receive buffer as it is sent from the port and the menu item is checked.

Note: Some hardware devices create a hardware echo on the receive data line of the serial port. This echo data is not differentiated in the receive buffer by DSRTTY-Win. If you wish to view echo data as a seperate font color from the receive data, turn the hardware echo off and the Echo menu item on.

Figure 3.2: Font Configuration
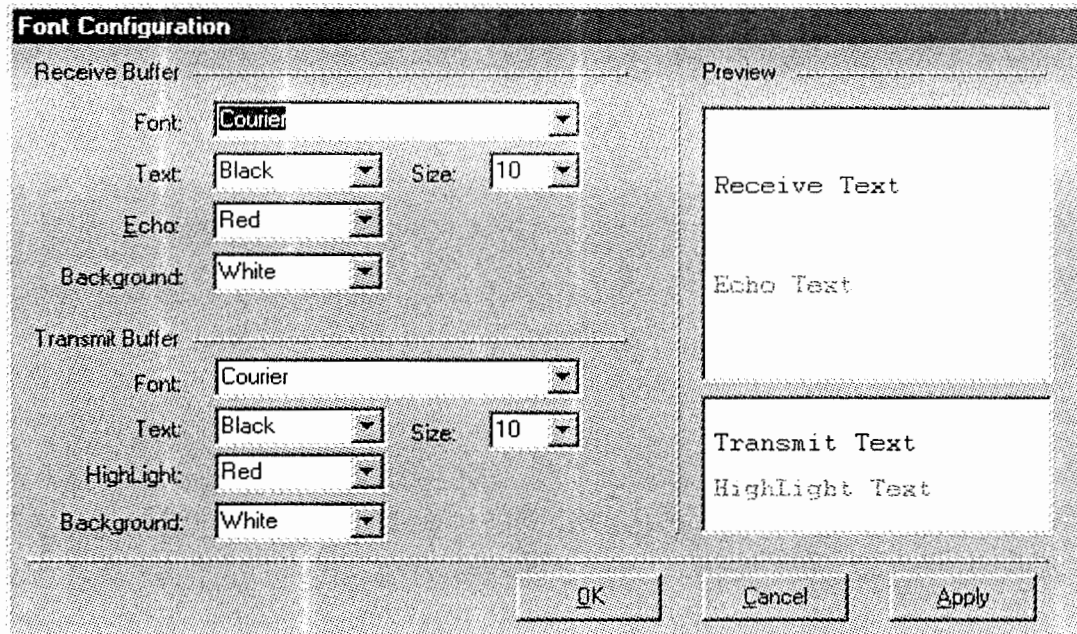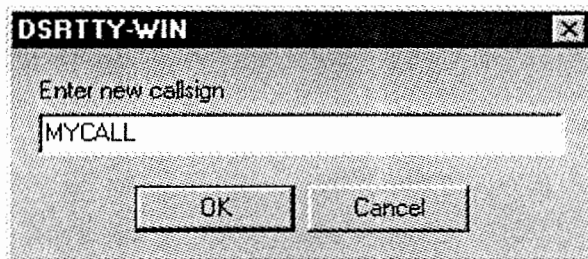
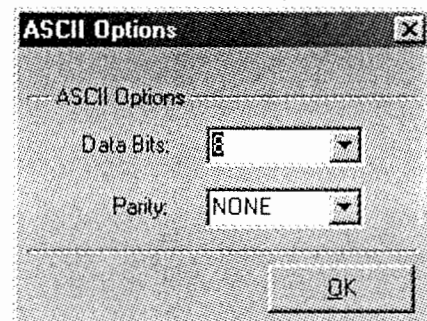**Figure 3.3: MYCALL Dialog Box**   **Figure 3.4: ASCII Options**

3.2.5 View

View shows or hides some of the commonly used tools in DSRTTY-Win. This allows for a customizable view. For example, in some cases the user may wish to maximize the viewing area of the receive buffer. In this case, hiding the toolbar will provide several additional lines of receive space.

Note: Hiding the status bar is an option. However, the status bar provides useful information on the current status of the application.

Tool Bar hides or shows the applications toolbar. (Section 3.3)

Status Bar hides or shows the status bar. (Section 3.7)

Here-IS Bar (ALT-X) hides or shows the Here-Is Bar. (Section 3.8)

More descriptions of all of these available tools are found in the section numbers listed above.

Note: The Here-IS Bar option is used more frequently than the other options. The HotKey ALT-X will change the state of the Here-IS Bar from hidden to visible quickly.

3.2.6 Clear RX (Alt-U)

Clear RX (Alt-U) provides a quick method for clearing the contents of the Receive Buffer.

3.2.7 Clear TX

Clear TX (Alt-V) provides a quick method for clearing the contents of the Transmit Buffer.

3.2.8 Help

HotKeys displays a help menu of all of the HotKeys used in DSRTTY-Win. There is an option to print all of the HotKeys used in the application.

Features displays a list of all of the current features in DSRTTY-Win. This list will be updated as new features are added to the application.

About displays a dialog box containing important DSRTTY-Win version information as well as a link to our web site (www.halcomm.com).

Note: It is very important to obtain the version information from this page when reporting software issues to customer service.

3.3 Tool Bar

The Tool Bar replicates all of the options found under the Options Menu item (Section 3.2.3). Further description of the visual aspects of the tool bar are provided below.

TX EN / TX DIS will display the state of the transmit buffer. This control can be considered to be the master control of the Transmit Buffer. Regardless of the many states the transmit buffer can be in, clicking this item controls the final state of the Transmit Buffer.

ASR / CONT displays the **A**uto **S**end and **R**eceive or **Cont**inuous state of the transmit buffer. Changing the mode the transmit buffer is made by simply clicking the buffer. Auto Send and Receive is further described in Section 4.2.2.
CHAR / WORD / LINE changes the state of the TX Mode.

CODE changes the character set used.

RATE provides for a fast means of selecting a new data rate. The rate may be increased by clicking RATE or by clicking the up-arrow. The rate can be decreased by clicking the down arrow.

USOS controls the UnShift On Space option available in DSRTTY-Win. USOS displays ON when enabled and OFF when disabled.

Note: The USOS option is only a Baudot RTTY option and has no affect on the state of the receive buffer in ASCII Baudot.

SYNC controls the state of the sync option. SYNC displays ON when enabled and OFF when disabled.

3.4 Receive Buffer

The **Receive Buffer** displays data from the serial port. The receive buffer has two states for normal operation: **Locked** and **UnLocked**. The **Locked** state is used for uninterrupted editing of the data, while **UnLocked** is the normal receive state.

Locked describes the state of the Receive Buffer to edit the contents including copy, cut, paste, and enter hiscall (also right click options). The Locked state should be considered a temporary state and the user should not allow the locked state to persist longer than necessary. However, DSRTTY-Win will hold receive data for the Receive Buffer until the receive buffer is no longer locked. The Receive Buffer will have a red border when locked to alert the user to UnLock the buffer when finished editing. Locking and UnLocking the control is designed to be intuitive for the user. Clicking and scrolling the buffer locks the Receive Buffer, while moving the mouse outside of the Receive Buffer Unlocks the control.

UnLocked describes the state of the buffer during normal operating. The buffer will display text using the options of the Fonts dialog (see section 3.2.4). Again, as described above, to UnLock the Receive Buffer simply move the mouse outside of the Receive Buffer.

The Receive Buffer also includes a double left click feature to enable quick capture of the sending stations Call Sign or ID into a special buffer. This is often refered to as HISCALL and is described in Section 3.5.

3.5 Splitter Bar

The Splitter Bar adjusts the Receive Buffer and Transmit Buffer height as well as provides usefull buffers and options for HISCALL.

To adjust the height ratio of the Receive Buffer to the Transmit Buffer simply click and drag the Splitter Bar up and down. The Receive and Transmit Buffers will be resized automatically.

Note: When adjusting the DSRTTY-Win Receive and Transmit Bufers the application will retain a certain minimum size for each buffer.

HISCALL contains a HISCALL buffer for use with HotKey and macros in DSRTTY-Win.

HIS DE MY loads the contents of HISCALL buffer "DE" and MYCALL (the station's call sign) into the Transmit Buffer.

DE MY loads "DE" and the station's call sign into the transmit buffer.

3.6 Transmit Buffer

The Transmit Buffer is a storage area for data to be sent from DSRTTY-Win to the PC serial port. When data is sent from the Transmit Buffer is dependant on several options within DSRTTY-Win.

The Transmit Buffer displays text in two different colors to easily view the status of the data that has been sent to the serial port hardware.

Note: The Transmit Buffer can easily be edited with mouse controls when the Transmit Buffer is disabled (TX DIS). However, this is not the case when the buffer is enabled (TX EN). In this state, the easiest method to change text in the Transmit Buffer is to use the keyboard options.

3.7 Status Bar

The Status Bar is very helpful in determining the state of the Transmit Buffer, the current character shift in Baudot RTTY, and the time in UTC format.

3.8 Here-IS Bar

The **Here-IS Bar** is a friendly tool that alows for easy editing of special Here-IS messages. The Here-IS Messages are a set of files that are commonly used by the user. The messages are easily configured by manually editing the 10 Here-IS files found in the program directory. An even easier method is to right click the Here-IS Bar Here-IS Message that you wish to edit. Right clicking the Here-IS Bar allows you to rename the text that is displayed for that particular Here-IS Message.

Chapter 4
Operation

This Chapter covers the general operation features of DSRTTY-Win. Many of the features of DSRTTY-Win and the visual aspects of the software were described in Chapter 3, User Interface. Here we will describe how to use the features of the application not already covered, including: Serial Port Data Rates, Keyboard Control, and Transmit Buffer Control.

4.1 Serial Port Data Rates

DSRTTY-Win uses the PC serial port to send and receive RTTY data transmissions using either Baudot or ASCII data codes at data rates between 45 and 9600 baud. Available DSRTTY-Win data rates are:

    45, 50, 57, 75, 100, 110, 150, 300, 600, 1200, 4800, 9600 Baud

4.2 Keyboard Control

Keyboard Control of the transmit buffer is covered in several tables including Function Keys, [ALT]-Character Keys, [CTRL]-Character Keys, Special Keys, and Macros.

Note: Macros and HotKeys are subject to change. Please refer to the Help page for updated information.

The use of the term HotKeys is generally reserved for the use of holding the **[ALT]** key while actively pressing and releasing a secondary key. Our use of the term HotKey will cover any of the special key presses covered in this section.

4.2.1 Functions Keys

The **Functions Keys** are **[F1]-[F10]**. When these keys are pressed the contents of the Here-IS Messages are displayed in the transmit buffer. This allows for the user to send commonly used files very quickly. The messages are edited from the Here-IS Tool Bar covered in section (3.8). There are ten editable Here-IS Messages.

Note: The **[F1]** key is reserved for transmitting a Here-IS Message. The normal convention is to display the help screen upon pressing this key. To display the help screen instead use the [ALT]-H HotKey described below.

4.2.2 [ALT]-Character Keys

The **[ALT]-Character Keys** are used with the manual conventions described in Section 2.4. Please, refer to Section 2.4 for this manual convention used in describing how to press and release the HotKeys listed.

The [ALT]-Character Keys are listed in Table 4.1.

HotKey	Function
[ALT]-B	Adds Both Time and Date to the Transmit Buffer
[ALT]-C	Adds the contents of the "HISCALL" buffer to the Transmit Buffer
[ALT]-D	Displays the Date in the Transmit Buffer
[ALT]-F	Forces RX Shift to FIGS immediately (Also see Alt-L)
[ALT]-H	Displays Hot Key Help Screen
[ALT]-I	Adds "DE" and MYCALL to the Transmit Buffer
[ALT]-L	Forces RX Shift to LTRS immediately (Also see Alt-F)
[ALT]-M	Adds MYCALL to the Transmit Buffer
[ALT]-P	Toggles Display LTRS/FIGS case (Baudot Only)
[ALT]-Q	Adds QBF Test Message to the Transmit Buffer
[ALT]-R	Adds Ruler Line Test Message to the Transmit Buffer
[ALT]-S	Adds U.S. Military Test Message to the Transmit Buffer
[ALT]-T	Adds Time to the Transmit Buffer
[ALT]-U	Clears the Receive Buffer
[ALT]-V	Clears the Transmit Buffer
[ALT]-W	Adds 12 LTRS Characters to the Transmit Buffer
[ALT]-X	Hides / Shows the Here-IS Toolbar
[ALT]-Y	Adds 36 RYs to the Transmit Buffer
[ALT]-Z	Adds U.S. Military Date-Time Group to the Transmit Buffer

Table 4.1: [ALT]-C Hot Keys

4.2.3 [CTRL]-Character Keys

The [CTRL]-Character Keys are listed in Table 4.2 below.

HotKey	Function
[CTRL]-F	Displays the Configure Fonts/Colors Dialog
[CTRL]-M	Displays the MYCALL Dialog

Table 4.2: [CTRL]-C Hot Keys

4.2.4 Special Keys

The Special Keys are listed in Table 4.3 below.

HotKey	Function
Esc	Immediately disables Transmit in Main Application and Closes Secondary Dialog Windows (ie. Fonts Dialog)
<	LTRS Character (Baudot Only)
>	FIGS Character (Baudot Only)

Special Keys

4.2.5 Macro Hot Keys

Macros are more advanced HotKeys because they can be stored in file format. This is especially help-ful when creating new text files for the Here-IS Messages. For example, the Macro %T will display the current time in UTC format regardless of when sent from the Transmit Buffer.

Note: The use of the % key with a space or invalid character will just process a % in the Transmit Buffer. This is especially helpful in ASCII RTTY where the '%' key is sometimes used prior to a space character. To force the transmission of the '%' key use the %% macro.

The Macro Keys are listed in Table 4.4 below.

HotKey	Function
%C	Adds the contents of the "HISCALL" buffer to the Transmit Buffer
%D	Displays the Date in the Transmit Buffer
%I	Adds "DE" and MYCALL to the Transmit Buffer
%M	Adds MYCALL to the Transmit Buffer
%Q	Adds QBF Test Message to the Transmit Buffer
%R	Adds Ruler Line Test Message to the Transmit Buffer
%S	Adds U.S. Military Test Message to the Transmit Buffer
%T	Adds Time to the Transmit Buffer
%W	Adds 12 LTRS Characters to the Transmit Buffer
%Y	Adds 36 RYs the the Transmit Buffer
%Z	Adds U.S. Military Date-Time Group to the Transmit Buffer
%%	Adds a '%' Character to the Transmit Buffer.

Table 4.4: Macro Keys

4.3 Transmit Buffer Control

4.3.1 Transmitting Text

The **Transmit Buffer** allows for the user to pre-type text in the Transmit Buffer similar to that of a stan-dard word processor. The Transmit Buffer will word wrap so that no words are split at the end of a line. As a line of text is sent from the buffer, the line will be removed.

4.3.2 ASR (Auto Send and Receive)

In **ASR** mode, DSRTTY-Win will initiate PTT when text is pending in the buffer to be sent. To disable PTT, press the **[ENTER]** Key at the end of the transmitted data. ALWAYS, end a transmission with **[ENTER]** as the last key typed.

In **CONT** mode, the transmit buffer is totally manually controlled and MUST be enabled and disabled by one of the User Interface (Chapter 3) options.

Note: The use of the space key is sometimes used to begin an idle transmission with SYNC idles (when SYNC is enabled). The space will activate the PTT line and DSRTTY-Win will fill the data stream with idle characters until pending data is available.

4.3.3 CHAR / WORD / LINE Mode

To determine when pending data for the serial port is sent there are three options available: Character, Word, and Line.

In Character (**CHAR**) mode, characters are sent from the Transmit Buffer as they are typed, or until previous characters typed are sent.

In Word (**WORD**) mode, characters are sent in word groups from the Transmit Buffer as new words are typed.

Note: Word mode is sometimes confusing to beginning RTTY operators, however it is often the pre-
      ferred method for sending RTTY. Remember after you begin a new word in the buffer, the last
      word typed will be sent (if the transmit data has caught up). Typing a word and then a space will
      still allow correction of the word typed prior to the word being sent to the PC serial port.

In Line (**LINE**) mode, characters are sent in groups of lines from the buffer.

Regardless of the current mode, if using ASR mode remember to **ALWAYS** end the transmission with the **[ENTER]** Key being the last pressed key. This allows DS-RTTY-Win to stop the transmission when there is no pending data.

Chapter 5
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