



Modem-TPS Software for FH915 and FH2400

User's Manual

Part Number xxxx

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ABOUT THIS MANUAL

Welcome to the Modem-TPS User's Manual!

This manual describes how to install and use the Modem-TPS software for the Frequency-Hopping Spread Spectrum radio modem family with 915 MHz and 2400 MHz frequency bands. For best performance of this software, please read all of the instructions carefully. They were especially designed to help you correctly install and operate this program.

Please note that this manual covers the configuration procedures only for the FH915 and FH2400 radios. If your receiver is equipped with the UHF440 or UHF460 modem, refer to the software documentation designed specially for this radio modem family.

We also assume that you have some knowledge of working with TPS receivers.

Symbols and typographic conventions

The information in this manual complies with several typographic conventions to make reading the material easier. Table below specifies all the text styles used in this manual.

Text format	Description
Click the Finish button...	Titles of dialog windows/boxes, names of menu options and other GUI components
Setup.exe	This format is used to represent the paths to files as well as the file names themselves

Also, in this manual you will find two levels of special visual cues to certain types of information. These symbols are given in the following table.

Graphic element	Explanation
	Vital information about the current topic that the user is recommended to take note
	This symbol describes the sequence of steps that the user must take

Screen Captures

This manual includes sample screen captures. Your actual screen can look slightly different from the sample screen due to the settings you have specified. This is normal and not a cause for concern.

What information can be found in this manual?

The contents of the Modem-TPS User's Manual are organized into the following three chapters:

Chapter One: Getting Started

- tells the user about purposes and features of the program.
- explains how to install and remove Modem-TPS. Also provides information about system requirements.
- shows how to launch and close Modem-TPS.

Chapter Two: Modem-TPS Operation

- provides information describing each tab, field and control you can access via the interface of Modem-TPS. It describes the purpose of each setting and the procedures for using it.

Chapter Three: Troubleshooting

- helps you in diagnosing, correcting and avoiding problems.

Supplemental Manuals

Once you have a TPS receiver and Modem-TPS, you will need to supplement this manual with the manual that is written specially for the receiver you have purchased.

Technical Support

Occasionally, Modem-TPS users encounter problems during installation or use of the program. Should you have any problems with Modem-TPS, please contact TPS Customer Support. Please be ready to provide TPS Customer Support with the following information:

- Did you try to fix the problem(s) on your own based on the troubleshooting tips available in the manual?
- System/hardware specifications of the computer on which you are running (installing) your Modem-TPS.

To get in contact with TPS Customer Support, please use the following e-mail addresses:

hardware@topconps.com or support@topconps.com.

I

GETTING STARTED

Modem-TPS is a comprehensive Windows software product designed for configuring embedded radio modems of the geodetic grade receivers developed by the Topcon Positioning Systems, Inc. Before you start using Modem-TPS, you should become familiar with its functions and learn how to install, launch, exit and uninstall the program.

In This Chapter

This chapter includes the following topics:

Modem-TPS's functions	2
Setting up Modem-TPS	2
Starting Modem-TPS	5
Closing Modem-TPS.....	6

Modem-TPS's functions

The most current version of Modem-TPS (as of 1.3, February 5, 2003) provides the following functions:

- Connecting a PC to an integrated TPS radio modem via the corresponding serial ports
- Displaying information about the radio modem installed in the receiver.
- Programming the radio modem's settings (such as Operation Mode, Link Rate, etc.)

Setting up Modem-TPS

System Requirements

In order to use Modem-TPS, your PC should meet the following criteria:

- PC-compatible with Intel® Pentium® 100 MHz or faster
- 10 MB of free hard disk space
- 32 MB of RAM or more (64 MB recommended)
- 32-bit operating system: MS Windows 98/2000
- Color monitor at 640x480 screen resolution



Please bear in mind that your radio modem must be uploaded with the firmware version 1.1 or newer to work properly with Modem-TPS

Installing Modem-TPS



To install Modem-TPS on your computer, please follow this procedure:

- Step 1. Open the **Run** command by clicking the **Start** button in the bottom-left corner of your computer screen, and

choosing **Run**. Use the **Browse** button, to specify the location of `Setup.exe`[†]. To start the setup process, click **OK**. Figure 1-1 demonstrates an example of the **Run** window containing the full path to the setup program.

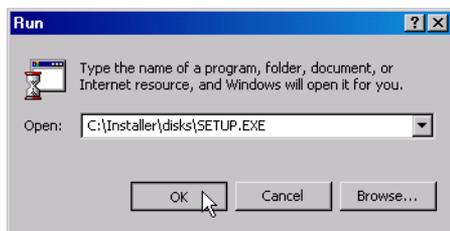


Figure 1-1. Launching setup program

Step 2. The **Modem-TPS Installation** window appears. Here the user can choose the folder into which he/she wants to install Modem-TPS. The default folder is `Program Files\Modem-TPS` on one of computer hard drives. Click **Finish** to continue installation (Figure 1-2).

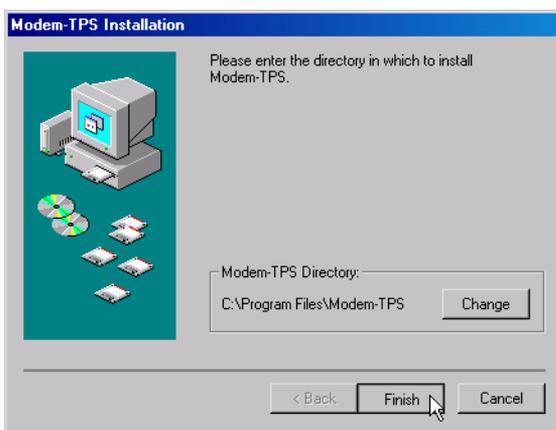


Figure 1-2. Selecting disk and folder to install Modem-TPS

[†] The setup program resides in `Installer/Disks` directory.

Step 3. Now the Modem-TPS files will be copied onto your computer (Figure 1-3).

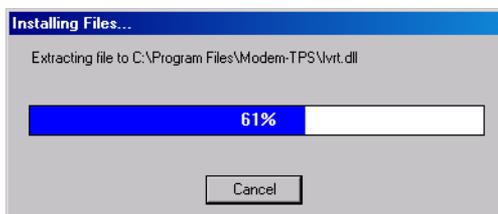


Figure 1-3. Modem-TPS is copied to the hard disk

Step 4. After Modem-TPS is installed, the following prompt will appear. Click **OK** to exit the installation (Figure 1-4).



Figure 1-4. Installation completed

Uninstalling Modem-TPS

There are two methods of removing Modem-TPS from your computer:

1. Using the **Uninstall Modem-TPS** option of the Modem-TPS program.
2. Using the **Add/Remove Programs** feature of the **Control Panel** in Windows.



To remove Modem-TPS using the first approach, take the following steps:

- Step 1. Click the Windows **Start** menu, point to **Programs**, and then choose **Modem-TPS ► Uninstall Modem-TPS**.
- Step 2. Modem-TPS will prompt you to confirm the removing. Click **Yes** to continue.

Step 3. When the removal is complete and successful, the following prompt will appear. Click **OK** (Figure 1-5).

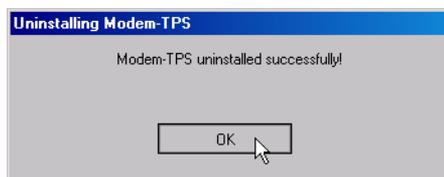


Figure 1-5. Modem-TPS has been successfully uninstalled



To remove Modem-TPS via Add/Remove Programs, follow these steps:

- Step 1. Click the Windows **Start** menu, point to **Settings**, and then click **Control Panel**.
- Step 2. Double-click **Add/Remove Programs**. The **Add/Remove Programs** dialog box appears.
- Step 3. From the **Currently installed programs** list, select Modem-TPS.
- Step 4. Click **Change/Remove**. Click **Yes** on the **Uninstalling Modem-TPS** prompt that shows up. Finally, click **OK**. Note that the program is no longer included in the **Currently installed programs** list.

Starting Modem-TPS

Modem-TPS can be launched, as any other Windows program, in one of the following ways:

- Way # 1. Double-click on Modem-TPS's shortcut on the desktop (if it has been created).
- Way # 2. In Windows Explorer go to the directory where `Modem-TPS.exe` resides and double-click on the corresponding icon.
- Way # 3. Press the **Start** button in the bottom-left corner of your computer's screen and select **Run** from the pull-up menu. In the **Open** box specifies the full path to `Modem-TPS.exe`. Press **OK**.

- Way # 4. Press the **Start** button in the bottom-left corner of your computer's screen, point to **Programs**, and then select **Modem-TPS ► Modem-TPS**.

After Modem-TPS is launched, the program window will appear (Figure 1-6).

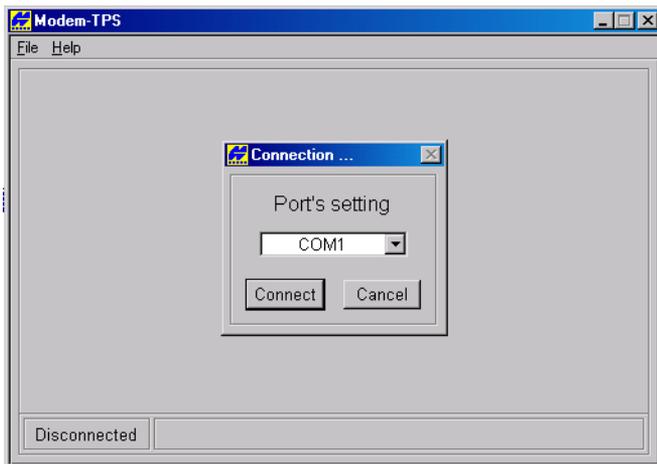


Figure 1-6. Main window

From the **Port's setting** drop-down box of the **Connection** window, select the computer serial port your receiver is connected to. Press the **Connect** button to establish communication with the TPS receiver.

Once a connection with the receiver has been established, you can use the controls to configure your radio modem. For a complete description of the controls available for configuring your radio modem, see Chapter 2, “Modem-TPS Operation” on page 7.

Closing Modem-TPS



To disconnect from the receiver, click the Disconnect button. To quit Modem-TPS, click Exit.

It is strongly recommended to close the connection with the receiver and close Modem-TPS prior to switching the receiver off and disconnecting the cable.

II

MODEM-TPS OPERATION

This chapter describes how to configure and manage the receiver's internal radio modem with the Modem-TPS software.

In This Chapter

This chapter contains the following topics:

Navigating through Modem-TPS.....	8
Using Modem-TPS.....	8

Navigating through Modem-TPS

Moving through Modem-TPS is like moving through any other Windows program. You can use your mouse to point and click or you can use the **Tab** key to move from field to field.

You can also use shortcut keys. These keys are used in menus where an alternate keystroke sequence is available.

These shortcut keys are shown on the right side of the corresponding menu items. For example, the user can select the **Disconnect** item (from the **File** menu) with the **Ctrl+D** keys.

Using Modem-TPS

After establishing communication with the radio modem, the user will be presented with the following tab controls:

- Radio Link** - As follows from its name, allows configuring and editing various settings related to the modem's radio link. See "Radio Link tab" on page 9.
- Serial Interface** - Allows selection of the settings that deal with communications between the receiver and radio modem. See "Serial Interface tab" on page 10.
- Identification** - Shows the radio modem type and other information relating to the radio modem. See "Identification tab" on page 11.

The following three topics describe each setting you can access through the Modem-TPS interface.

At the very bottom of the program window is the status bar. The left hand area of the status bar shows the current communication settings (i.e., COM port # and baud rate used for connection). The rest of the status bar is intended for displaying various error messages. At the right end of the status bar is a timer showing how long you are in the program.

Use the **Apply** button to confirm the changes made in the tabs.

Radio Link tab

The **Radio Link** tab is shown in Figure 2-1.

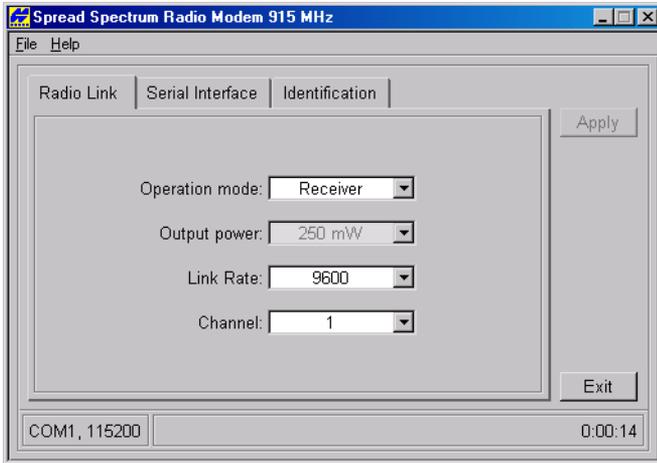


Figure 2-1. Radio Link tab

In the **Operation mode** dropdown text box, the user specifies the mode in which the radio will be functioning. There are three modes available:

- Receiver** - Means that the radio is used for picking up the radio signals transmitted by the reference station's modem.
- OFF** - Means that the radio modem is turned off.
- Transmitter** - Means that the radio modem is configured as a transmitter. In this mode, it broadcasts data to the rover receivers.

With the **Output power** control, the user adjusts the radio transmission power of the base station's radio modem. There are two transmit power levels available: 250 mW and 1 W.

With the **Link Rate** control, the operator selects the rate at which data is transmitted over the RF link. The FH radio modem supports 9600, 17000, 24000, and 51000 baud.



The selection of 9600 baud provides the maximum reliability for data communication but it is achieved at the cost of reducing data throughput. If, for some reason, you need to have the maximum throughput, use 51000 baud, but please remember, that this link rate has the lowest reliability for data communication

The **Channel** dropdown list box allows the operator to assign a particular operating channel number to the modem. Each of the five available channels possesses the unique communication properties. It allows the use of up to five simultaneously transmitted radio modems on your jobsite without interference between them.

Serial Interface tab

The **Serial Interface** tab is depicted in Figure 2-2.

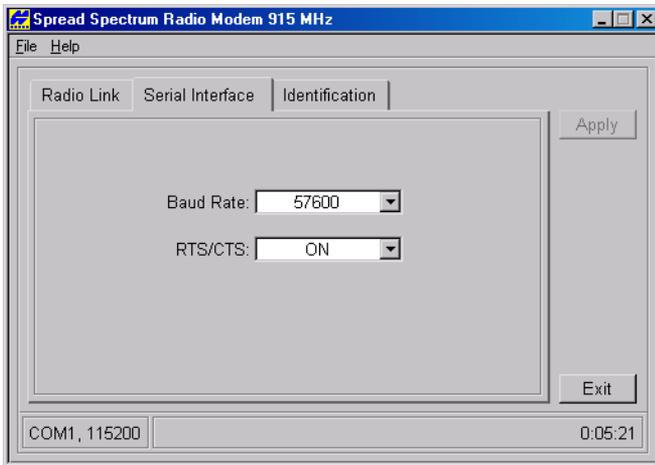


Figure 2-2. Serial Interface tab

This tab lets the operator specify the baud rate of the modem's serial port and a method used for controlling the flow of data between the receiver and modem.

From the **Baud Rate** dropdown list box, select a baud rate for the modem's serial port. With this speed data will be transmitted from the receiver to modem, and vice versa.



The same rate must be used at both the receiver and modem sides

By selecting **ON** from the **RTS/CTS** control, the user enables hardware flow control. **OFF** disables hardware handshaking.

Identification tab

Identification tab provides you with information about modem type, firmware version, board revision, and serial number. Figure 2-3 shows an example of this window.

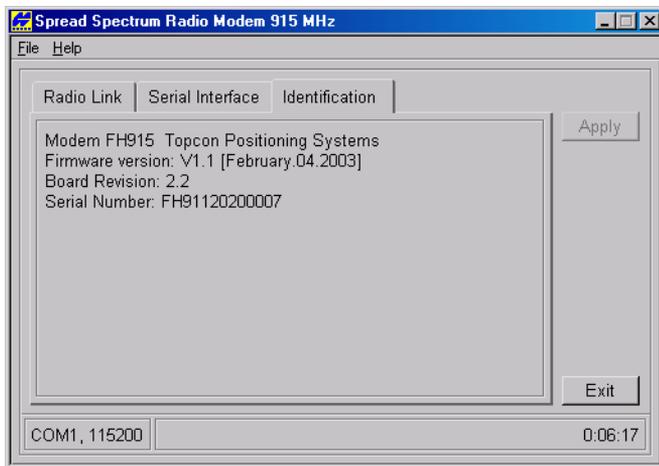


Figure 2-3. Identification tab

C H A P T E R
III

TROUBLESHOOTING

This chapter can help the user solves some of the problems that may occur while using Modem-TPS.

In This Chapter:

This chapter contains the following topic:

Troubleshooting chart 14

Troubleshooting chart

The chart below covers most of the difficulties that the user might encounter. The first column contains the error messages that appear in the status bar.

Error messages	Possible cause	Action to take
Can't find receiver.	The receiver is turned off.	Make sure that your receiver is getting power and is turned on.
	The cable's connectors are not properly plugged in.	Check the connections to make sure they are not loose. Check the cables running from the receiver's port to the computer port to ensure they are tight as well.
	The cable is damaged.	Replace the cable. Contact your Dealer to purchase new cable.
	The receiver port used for connection is not in Command mode.	Restore Command mode for this port or use another receiver port (for example, D).
	The computer port you have selected for connection is not the same as you specified in the PC Serial Port control.	Check that your receiver is connected to your PC using the proper RS232 cable for connection to a PC and make sure that the cable is exactly plugged into the same PC serial port as you specified in the Port's setting drop down list of the Modem-TPS software.
Can't find modem.	There are no radio modem installed in your receiver	Contact you Dealer to equip the receiver with FH radio modem
	Unknown radio modem type is installed	
Open COM# port failed: Access is denied.	The computer port dedicated for connection is in use by another application.	Close the application used this port or connect to the receiver via another free computer port.