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Til Transceiver Data Programmer TDP-500 For TFM-500

Installation and Operating Instructions

TiL Document No. 01RE285 Rev. n/c

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SECTION 1

GENERAL DESCRIPTION

1.1 INTRODUCTION

This publication provides operating and installation information on the TiL Transceiver Data Programmer for the TFM-500 (TDP-500). The TDP software allows a standard PC to retrieve data from a connected TFM-500 transceiver, for editing, storing, and sharing with other TFM-500 transceivers. With the TDP software, you can create, save and print archives of your TFM-500 channel settings.

1.2 DESCRIPTION

The TiL TDP-500 software is a 32 bit Windows application that will work under Windows 95, Windows 98 and Windows NT 4.0. There are no known issues preventing the TDP-500 from working under Windows 2000. Please see section 2 for details on your particular installation.

1.3 MINIMUM SYSTEM REQUIREMENTS

Windows 95

- Intel 486 or compatible based PC
- Windows 95 with the latest Service Releases/Packs installed (Installation of Microsoft Internet Explorer 5.0 or any Microsoft application more recent than mid 1998, will have automatically updated the required system files.)
- Mouse
- 10 MB free Hard-Disk space
- One available properly configured RS-232 serial (COM) port

or Windows 98 / Windows 2000

- Intel or compatible Pentium class PC
- Windows 98 or Windows 2000 with the latest Service Releases/Packs installed
- Mouse
- 10 MB free Hard-Disk space
- One available properly configured RS-232 serial (COM) port

or Windows NT 4.0

- Intel or compatible Pentium class PC
- Windows NT 4.0 with at least Service Pack 4 installed (Installation of Microsoft Internet Explorer 5.0 or any Microsoft application more recent than mid 1998, will have automatically updated the required system files.)
- Mouse
- 10 MB free Hard-Disk space
- One available properly configured RS-232 serial (COM) port

SECTION 2

INSTALLATION INSTRUCTIONS

2.1 SOFTWARE INSTALLATION

Before the TDP software can be installed, all the minimum computer system requirements outlined in the previous section must be met, or you will have difficulty installing or operating the software.

The Installation procedures outlined in this document, assume some basic working knowledge of at least one of Microsoft's Windows 95/98/NT/2000 operating systems.

NOTE: At any point during installation, if any Dialog Boxes pop up exclaiming that newer system files are about to be overwritten by older files, click on NO to skip overwriting newer files.

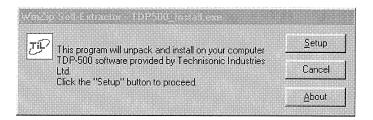


Figure 2.1.1 - Setup Extraction Dialog

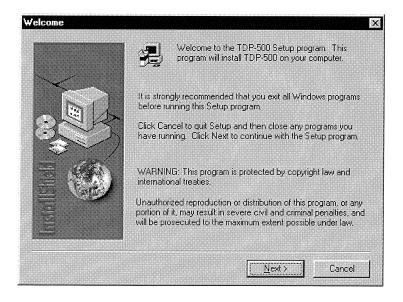


Figure 2.1.2 - Welcome Dialog

This is a standard Welcome dialog box. To continue installation click on **Next>**. In any one of the dialog boxes, program installation can be stopped at any time by clicking the **Cancel** button.

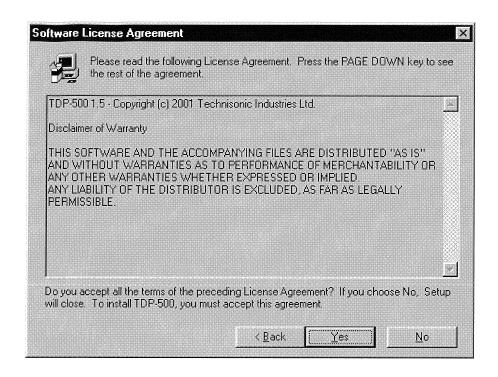


Figure 2.1.3 - License Agreement

In order to Install the TDP-500 Software onto your computer, you must agree to the terms of the license agreement, and confirm so by clicking on OK in the License dialog box.

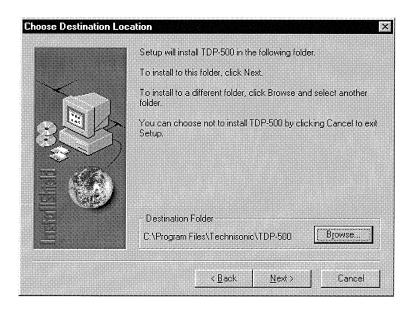


Figure 2.1.4 - Program Installation Dialog

2.1.1 Windows 95

If your computer does not have Microsoft Internet Explorer 5.0 or any other Microsoft application, no later than mid 1998 installed, then it is possible that certain essential system files are outdated. If these system files are outdated your system will not meet the minimum requirements for installing and operating a large variety of new software including the TDP software.

If your computer DOES meet the minimum requirements, you may proceed to step 3.

1. To update Windows 95, you will need to install an update available on Microsoft's website, called DCOM95 (dcom95.exe). To download DCOM95, just enter this current (as of the release date of this manual) Internet URL for the file in your 'location bar' in your Internet Browser.

http://download.microsoft.com/msdownload/dcom/95/x86/en/dcom95.exe

Your Browser will invoke a SAVE AS dialog box for you to save the file. Keep track of where you place it, as you will be required to locate it and RUN it. Conveniently, the file will fit on a regular IBM Formatted $3\frac{1}{2}$ " 1.44MB floppy disk, for easy transport and distribution.

If you have the DCOM95.EXE update file on a floppy disk, copy/place it in a temporary location on your Hard-disk.

- 2. RUN DCOM95 by locating and double-clicking on it in Windows Explorer. Any System files on your computer that are OLDER than the ones contained in the DCOM95 update, will be replaced. You will be asked to restart your computer. Do so, and when the computer has finished booting, you will have an updated Operating System that will meet the requirements of the TDP software.
- 3. To install the TDP software, locate the TDP500_Install.exe file on the CD-ROM using Windows Explorer. When you have located it, double-click it to start the setup process.

You will see the first Setup dialog (Figure 2.1.1). Click on the Setup button to continue installation. The Setup will unpack the necessary components. After it completes, you will see a Welcome dialog box. Click **Next**> to continue. Before you can continue, you will have to agree to the terms of the License Agreement by clicking **OK** (Figure 2.1.3).

- 4. The next dialog box that comes up will give you the option to continue (by clicking on the **Next**> button see Figure 2.1.4), exit the setup, or at this time you may choose an alternate location for the installation. If you have no objections to the default location just click on the **Next**> button to continue the installation.
- 5. The TDP installation will ask what START menu Program Group you want the TDP software shortcut installed. Click **Next>** if the default Program Group name shown is adequate.

The Transceiver Data Programmer is now installed and ready to use with a TFM-500.

2.1.2 Windows 98 / Windows 2000

Windows 98 comes pre installed with Internet Explorer 5.0 embedded into the operating system. As a result, the operating system as a whole meets the requirements for the installation and operation of the TDP software.

1. To install the TDP software, locate the TDP500_Install.exe file on the CD-ROM using Windows Explorer. When you have located it, double-click it to start the setup process.

You will see the first Setup dialog (Figure 2.1.1). Click on the Setup button to continue installation. The Setup will unpack the necessary components. After it completes, you will see a Welcome dialog box. Click **Next**> to continue. Before you can continue, you will have to agree to the terms of the License Agreement by clicking **OK** (Figure 2.1.3).

- 2. The next dialog box that comes up will give you the option to continue (by clicking on the **Next>** button see Figure 2.1.4), exit the setup, or at this time you may choose an alternate location for the installation. If you have no objections to the default location just click on the **Next>** button to continue the installation.
- 3. The TDP installation will ask what START menu Program Group you want the TDP software shortcut installed. Click **Next>** if the default Program Group name shown is adequate.

The Transceiver Data Programmer is now installed and ready to use with a TFM-500.

2.1.3 Windows NT 4.0

For a Windows NT 4.0 installation, a minimum of Service Pack 4 must be installed. If you do not have at least Service Pack 4, contact Microsoft for the most current Service Pack.

1. To install the TDP software, locate the TDP500_Install.exe file on the CD-ROM using Windows Explorer. When you have located it, double-click it to start the setup process.

You will see the first Setup dialog (Figure 2.1.1). Click on the Setup button to continue installation. The Setup will unpack the necessary components. After it completes, you will see a Welcome dialog box. Click **Next** > to continue. Before you can continue, you will have to agree to the terms of the License Agreement by clicking **OK** (Figure 2.1.3).

- 2. The next dialog box that comes up will give you the option to continue (by clicking on the **Next**> button see Figure 2.1.4), exit the setup, or at this time you may choose an alternate location for the installation. If you have no objections to the default location just click on the **Next**> button to continue the installation.
- The TDP installation will ask what START menu Program Group you want the TDP software shortcut installed. Click Next> if the default Program Group name shown is adequate.

The Transceiver Data Programmer is now installed and ready to use with a TFM-500.

2.2 HARDWARE INSTALLATION

To interconnect the TFM-500 to your PC, you must connect the 9 pin (male) D connector of the supplied Data Cable (TiL Part No. 993390-1) to the TFM-500, and the other 9 pin (female) D connector end of the cable to an available Serial (COM) Port on your PC.

Furthermore, you must supply power to the TFM-500, by applying +28 Volts (DC, minimum 2 Amps capable) to pins 7 and 14, and Ground to Pins 8 and 15 of the 15 pin (male) D connector on the rear of the transceiver (as per Figure 2.2.1).

View of rear of Transceiver

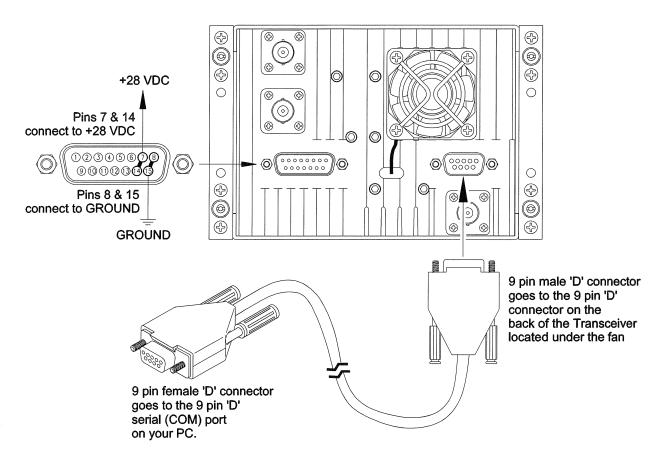


Figure 2.2.1 - Data and Power Cables

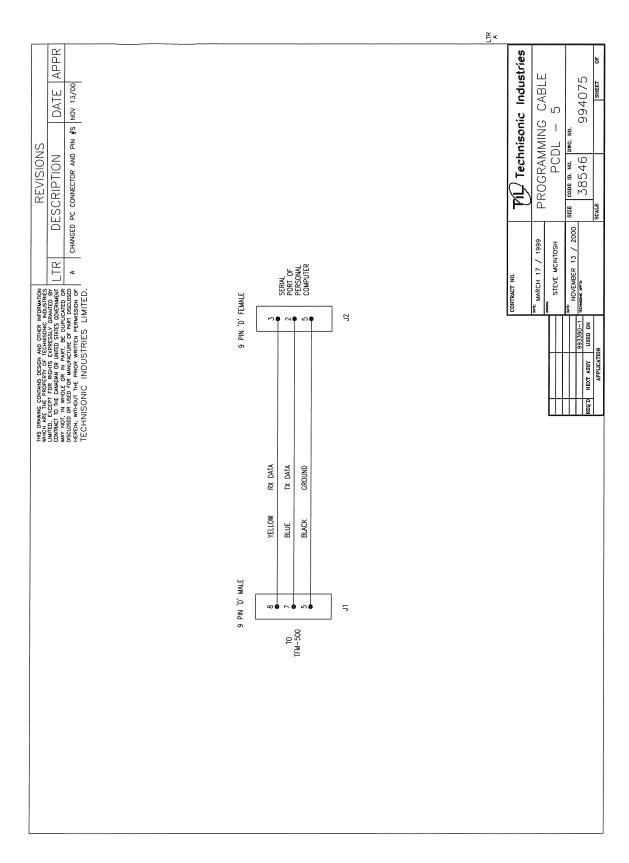


Figure 2.2.2 - Data Cable Wiring Diagram

If you do not have a TiL Data Cable 993390-1, you may make your own as per figure 2.2.2, or you may purchase a cable from Technisonic Industries Ltd. directly, or through our distributor.

SECTION 3

OPERATING INSTRUCTIONS

3.1 GENERAL

This section contains instructions for the correct operation of the TDP-500 software, and explains the various parts and elements of the program's Graphical User Interface (GUI).

NOTE: The following images are examples only, and may not reflect your particular data settings, or current TDP software version.

3.2 GETTING STARTED

To start the TDP-500 in Windows, simply click the Start menu > Programs > TiL Transceiver Data Programmer > TDP-500. The program will start, and the following program window should open up. The Current version number is in square brackets in the Title Bar.

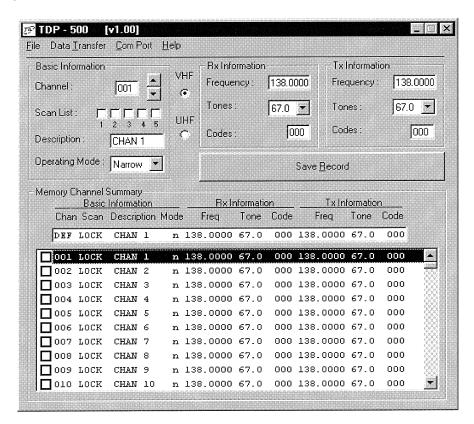


Figure 3.2.1 - Program Window

NOTE: ** Use of a mouse is highly recommended! ** It is possible however, to use both Windows itself, and the TDP software by using the [Tab], [Shift] + [Tab] and 'cursor' keys to navigate through the program interface. You will note that all menu items and buttons have an underlined letter. By pressing the [Alt] key and the underlined letter in the menu bar or button, you can pull down that menu item. eg: [Alt] + F, would pull down the file menu. You could then cursor down to the desired function, or press the underlined letter for the corresponding function.

Figure 3.2.2 - Program Title Bar

For your convenience, the name of the currently opened data file, for the band you have currently selected (in this case VHF - see figure 3.3.2) will be displayed. In this instance the user saved file Vhf1.500, is shown in the Program Title Bar. No filename will be displayed on initial program startup. When you select the UHF band, assuming there is a user data file loaded, the title bar will display the name of the UHF data file currently loaded. Nothing will be displayed if there is no data file loaded.

3.3 GRAPHICAL USER INTERFACE (GUI)

The window is broken up into 5 logical sections or 'frames'. Basic Information, Rx Information, Tx Information, Memory Channel Summary, and a menu bar (File, Data Transfer, and Com Port).

3.3.1 Basic Information

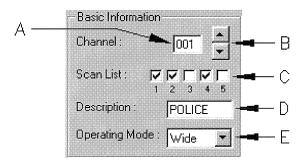


Figure 3.3.1.1 - Basic Information

In the Basic Information frame, the current active channel for editing is displayed. This field displays the active channel number, the scan list(s) that the current channel is to be included in, the label/name assigned to that channel and the channel spacing.

- A The Channel box displays the currently active channel. Valid entries are DEF, 1 through 200, GD1, and GD2. If you like, you may directly enter the channel number you would like to edit into this box. Invalid characters will be ignored.
- **B** The UP/DOWN buttons allow you to select the next or previous channel for editing. If you should scroll down past the lower channel limit (001), the channel will jump to GD2 and continue scrolling down from there. Inversely, if you should scroll up past the upper channel limit (GD2), the channel will jump to 001 and continue scrolling UP from there. This wrapping function is offered as a courtesy. DEF is not included in the scrolling function.
- C The Scan List select boxes allow you to assign the current active channel to any, or a combination of any of the 5 available scan lists.

- **D** The **Description** text box, allows you to enter a display name/label for the current active channel. The label can be any arbitrary word up to 9 characters in length. Valid characters are 0 through 9, (upper-case) A through Z, (space), . (period), ?, -, +, _ (underscore), /, : (colon), (lowercase) z, *, and !. All other (invalid) characters will be ignored. As a courtesy, the TDP-500 will automatically change any alphabetic keystrokes to upper-case automatically, independent of the state of the shift, or Caps-Lock keys.
- **E** The **Operating Mode** pull-down list box, sets and/or displays the current mode of operation for the active channel. The options are Wide, or Narrow. The pull-down box allows for selection but not direct entry.

Wide mode defines a frequency spacing of 25 kHz. Channels may have frequencies spaced 0.0025 MHz apart. For Narrow mode, this number can be 12.5 kHz (0.0012 MHz).

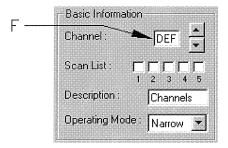


Figure 3.3.1.2 - Basic Information - DEF

F - When the current active **Channel** is DEF, You may edit the DEFault values of all information entered into the Basic Information, Rx information, and Tx Information frames. These entries will become the defaulted values pre-entered into all the fields of each frame for any active channel that has never been edited.

3.3.2 Band Selector

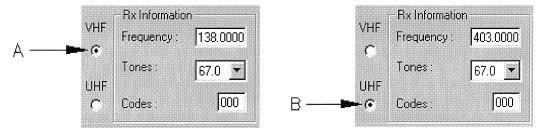


Figure 3.3.2 - Band Selector

- A The VHF mode sets the frequency limits of the TDP-500 software from 138.0000 to 174.0000 MHz. The TFM-500 has 200 memory channels and 2 guard channels available for the VHF mode.
- **B** The UHF mode sets the frequency limits of the TDP-500 software from 403.0000 to 512.0000 MHz. The TFM-500 has 200 memory channels available for the UHF mode. There are no UHF Guard channels.

NOTE: For the purpose of this manual, the following figures display the TDP-500 in VHF Mode. Functionality remains the same for UHF mode.

3.3.3 Rx Information

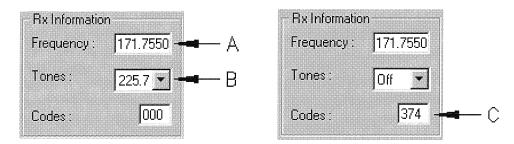


Figure 3.3.3 - Rx (Receive) Information

- A This Frequency box determines the receive frequency. The valid range is 138.0000 MHz to 174.0000 MHz, in 25 kHz (0.0025 MHz) steps. The Program will ignore invalid keystrokes, and will automatically limit your frequency entry to follow the 0.0025 MHz spacing rules.
- **B** The Tones pull-down list allows for the selection of an industry standard tone frequency for the CTCSS squelch mode. The pull-down box allows for selection but not direct entry.
- **C** The Codes pull-down list allows for the selection of an industry standard DPL code for the DPL squelch mode. The pull-down box allows for selection but not direct entry.

3.3.4 Tx Information - Simplex and Split Pair

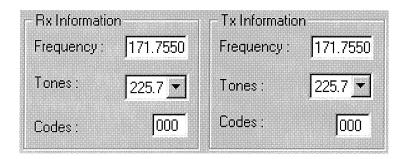


Figure 3.3.4.1 - Tx (Transmit) Information - Simplex

In the simplex operating mode, the description for all the data fields of the Tx Information frame are the same as that of the Rx Information frame. As you enter information into the fields of the Rx Information frame, all the entries immediately copy over to the corresponding field of the Tx Information frame.

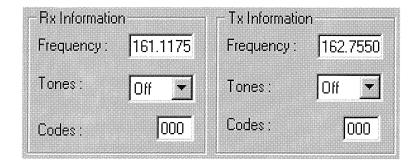


Figure 3.3.4.2 - Tx (Transmit) Information - Split Pair

Data in the Tx Information fields may be entered independent of the Rx information field values. As soon as an entry in one of the Tx fields differs from the corresponding Rx field, the TDP will enter **Split Pair** mode for that channel, and disassociate the two frames. Only when the data fields are made the same by the user will the TDP software continue to keep the frames the same for that channel.

3.3.5 Save Record Button



Figure 3.3.5 - Save Record Button

The Save Record button, will commit to the active channel, any changes done in the Basic Information, Rx Information, Tx Information frames. You will see the active channel data in the Channel Information Summary reflect the changes made. By clicking on the Save Record, the active channel will advance by one record.

3.3.6 Memory Channel Summary

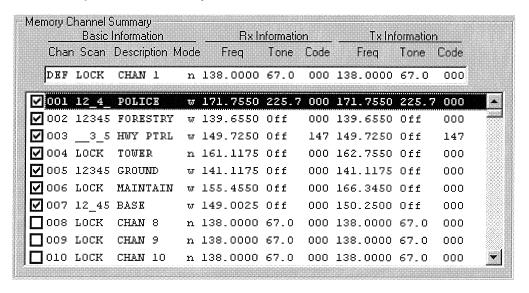


Figure 3.3.6.1 - Memory Channel Summary Window

The Memory Channel Summary window displays the currently stored settings for all of the 200 channels for VHF and UHF, and 2 GUARD channels for the VHF band. All of the information for each channel line represents the settings as defined in the Basic Information, Rx Information, and Tx Information fields. The up-down scroll bar on the right will allow you to quickly move to the desired channel in the summary window. Any channel you click on in the Memory Channel Summary window will become the 'active' channel displayed in the Editable frames/fields above. The editable channel default settings (defined as 'Def') are shown at the top of the summary window, and remain there for quick reference, independent of the channel list position. There are separate DEF entries for both VHF and UHF modes.

The currently selected (active) channel as shown in the Basic Information frame will appear highlighted in the Memory Cannel Summary window. Inversely, any channel you select in the Summary window will become the currently active channel for editing in the Basic Information, Rx information, and Tx information frames.

If the Save Record button is clicked at any point after editing any active channel, the changed information is reflected for that channel in the summary window.

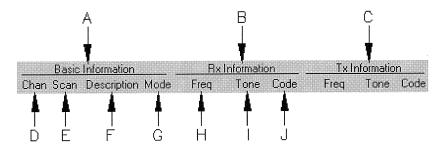


Figure 3.3.6.2 - Memory Channel Summary Window Header

- A All information under this heading represents the Basic Information configuration for each of the 202 channels. See 3.3.1
- $\mbox{\bf B}$ The Receive settings for the 202 channels are arranged in columns under this heading. See 3.3.2
- ${f C}$ All the Transmit settings for the 202 channels are arranged in columns under this heading. See 3.3.3
- **D** Chan represents the channel number, 0 to 200 for VHF and UHF, and GD1/GD2 for VHF only.
- E Scan shows which scan list(s) each channel is currently assigned to.
- F The Description is the alphanumeric label or name assigned by the user to the Channel.
- **G** Mode indicates the spacing of the channel. n indicates narrow channel spacing (12.5 kHz), the w indicates wide channel spacing (25 kHz).
- **H** This is the receive Frequency assigned to the channel.

- I This is the user selected Tone assigned to the CTCSS function.
- J Code is the user selected digital code assigned to the DPL function.

Note: The descriptions for the headings H, I, and J represent the same data types for the Transmit Information.

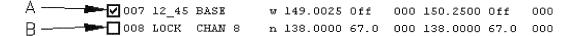


Figure 3.3.6.3 - Save and Erase Check Box

To the left of the Channel number, you will notice a column of check-boxes. These check-boxes indicate whether a channel's content data is to be saved, erased or ignored during the download process.

- A The check-box indicates a channel whose data is to be updated in the connected TFM-500 during download.
- **B** An empty check-box will do nothing during download. During the download process, the channel will be skipped over. (See 3.3.5 C and D)

3.4 PULL DOWN MENUS

The TDP-500 has many functions available through the use of pull-down menus. Through these menus you can invoke file functions, print the entire channel list, initiate communications with a connected TFM-500 and quit the TDP software.

3.4.1 File Menu

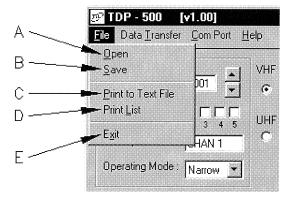


Figure 3.4.1 - File

- A Open will bring up the Open dialog box to allow you to select an existing file to load with a .500 extension.
- **B** <u>Save</u> will allow you to save the Current data set into a file with a name of your choosing. The filename may be any length up to 64 characters. A file extension of .500 will be automatically appended to the filename. (eg: Dataset1.500)

- **C** The <u>Print to Text File</u> option will create a text file of the entire channel list, as presented in the Memory Channel Summary window. The Summary header will be included at the top of the file. The text file may then be inserted into your own documentation.
- **D** The **Print List** function will print the contents of all 200 channels for whichever mode (VHF or UHF) you have selected, as they appear in the Memory Channel Summary window. For VHF the list will include the GUARD (GD1 and GD2) channels. As a courtesy, each printed page will have the description heading for each data column.
- **E E**<u>x</u>it will quit the TDP-500 program. If you have not saved your data, or if any changes were made to your data set since your last save, the TDP will warn you of this, and allow you to do so before quitting.

3.4.2 Data Transfer Menu

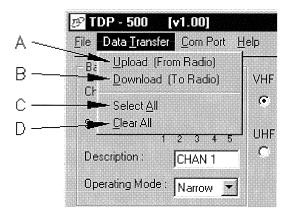


Figure 3.4.2.1 - Data Transfer

A - <u>Upload</u> (from Radio) instructs the TDP-500 program to wait for and read in the channel data from the TFM-500 connected to the Computer's COM Port.

IMPORTANT: You must click this BEFORE instructing the connected TFM-500 to SEND the channel data

- **B Download** (to Radio) instructs the TDP-500 program to send the channel data from the TFM-500 connected to the Computer's COM Port.
- C Select All marks all channels for download to the TFM-500. In the Channel Summary window, all channels will be marked with a ☑ to the left of the channel number. All channel data will be updated to the TFM-500 connected to the PC, during the download process.
- **D** <u>Clear All</u> un-selects all channels in the Channel Summary window. Any channel marked with a <u>U</u> will NOT be updated during the Download process.



Figure 3.4.2.2 - Press Enter Dialog

When Uploading channel data from a TFM-500, this dialog box will pop up asking you to press enter on the TFM-500. The TFM-500 will wait for Enter to be pressed before sending data to the TDP-500 software.

3.4.3 COM Port Menu

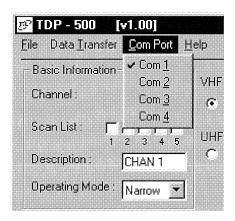


Figure 3.4.3 - COM Port

This selects the COM (RS-232 Serial communications) port on your computer, to which the TFM-500 is connected. On ANY computer manufactured after 1990, COM 1 is typically a 9 pin male "D" connector. COM 2 may be either a 9 pin male or 25 pin male "D" connector. COM 3 and COM 4 are available in the TDP-500 software as a valid option, although they typically exist only in a computer with a third party Serial communications Card installed.

Any time you select a COM port, the selection is saved automatically. Next time the TDP-500 software is run, the COM port you chose, will be selected.

NOTE: ** The TDP-500 software assumes you have an available, properly configured COM port, and for data transfer, will assume a properly connected TFM-500 **

3.4.4 Help Menu

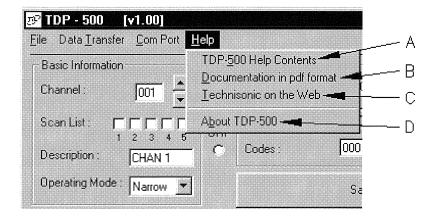


Figure 3.4.4 - Help Menu

- A TDP-500 Help Contents will start the Windows Help dialog for the TDP-500 software.
- **B Documentation in PDF format** will essentially bring up this manual in Adobe Acrobat format. You must have Adobe Acrobat Reader installed to view the online Manual.

NOTE: If you do NOT have Acrobat Reader installed, you may get free on the internet at: www.adobe.com

- C Technisonic on the Web will start up your default Internet Browser and connect you to the Technisonic Industries Ltd. website.
- **D About TDP-500** This dialog box displays Technisonic Company and contact information as well as the Revision number of the TDP software.

3.5 RS-232 SERIAL TECHNICAL DATA

The TDP-500 communicates with a connected TFM-500 transceiver at 9600 Baud, 8 Data bits, no Parity and 1 Stop bit. The TDP software sets these communications parameters upon startup independent of the Windows default settings for the COM port you are using. These communications parameters are not user configurable.