Data Programming Software for PIB-100 Interface Box

Installation and Operating Instructions

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1 SECTION

GENERAL DESCRIPTION

1.1 INTRODUCTION

This publication provides operating and installation information on the TiL Data Programmer (PIB-100) for the PIB-100 programming interface box. The PIB-100 interface box with PIB-100 software provides an interface between the Technisonic airborne FM transceiver and a standard PC. The radio models supported are:

TFM-30	-	All versions
TFM-138	-	Versions with 100 memories
TFM-138B	-	Versions with F14 software and above
TFM-403	-	Versions with H6 software and above

The PIB-100 software allows a PC to retrieve data from a connected TFM transceiver for editing, storing, and sharing settings with other transceivers of the same model. With the PIB software, you can create, save and print archives of your transceiver channel configurations.

1.2 DESCRIPTION

The TiL PIB-100 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 PIB-100 from working under Windows 2000. Please see section 2 for details on your particular installation.

1.3 MINIMUM SYSTEM REQUIREMENTS

Windows 95

Intel 486 based or compatible 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
5MB free Hard Disk space
1. 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
5MB 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
5MB free Hard Disk space
One available properly configured RS-232 serial (COM) port

2 SECTION

INSTALLATION INSTRUCTIONS

2.1 SOFTWARE INSTALLATION

Before the PIB 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 Windows 95/98/NT/2000 operating systems.

In order to install the PIB-100 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.

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

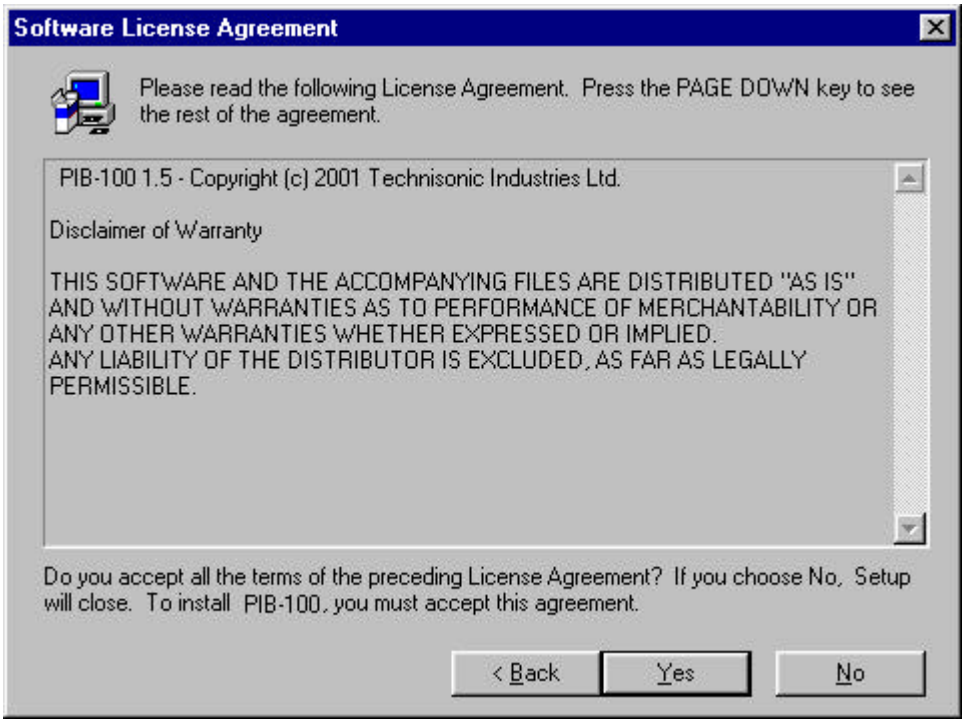

Figure 2.1.3 - License Dialog

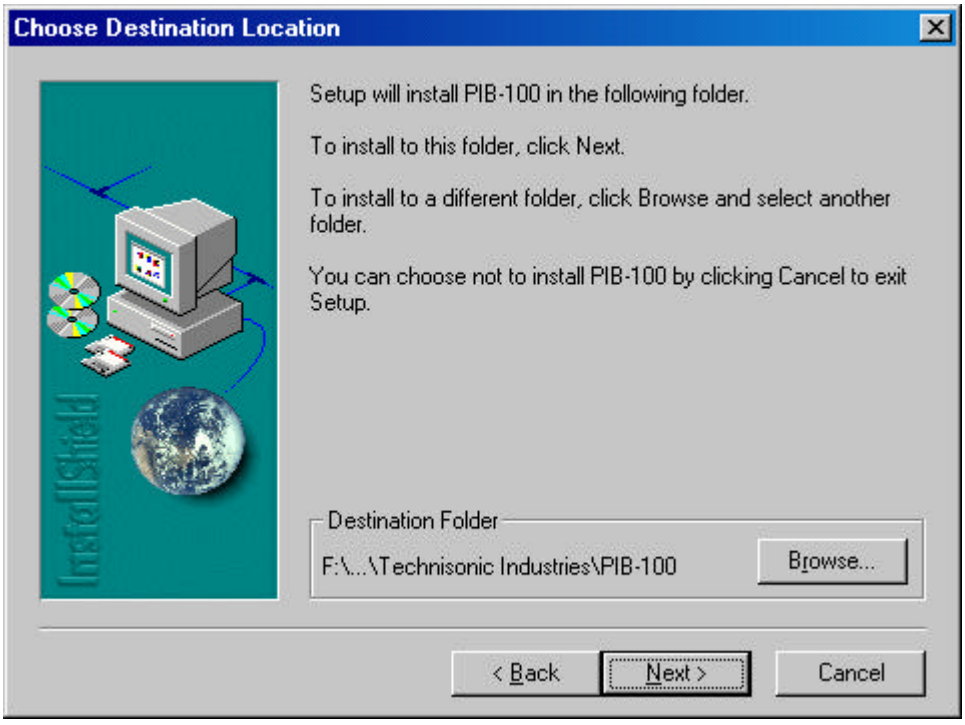

Figure 2.1.4 - Destination Dialog

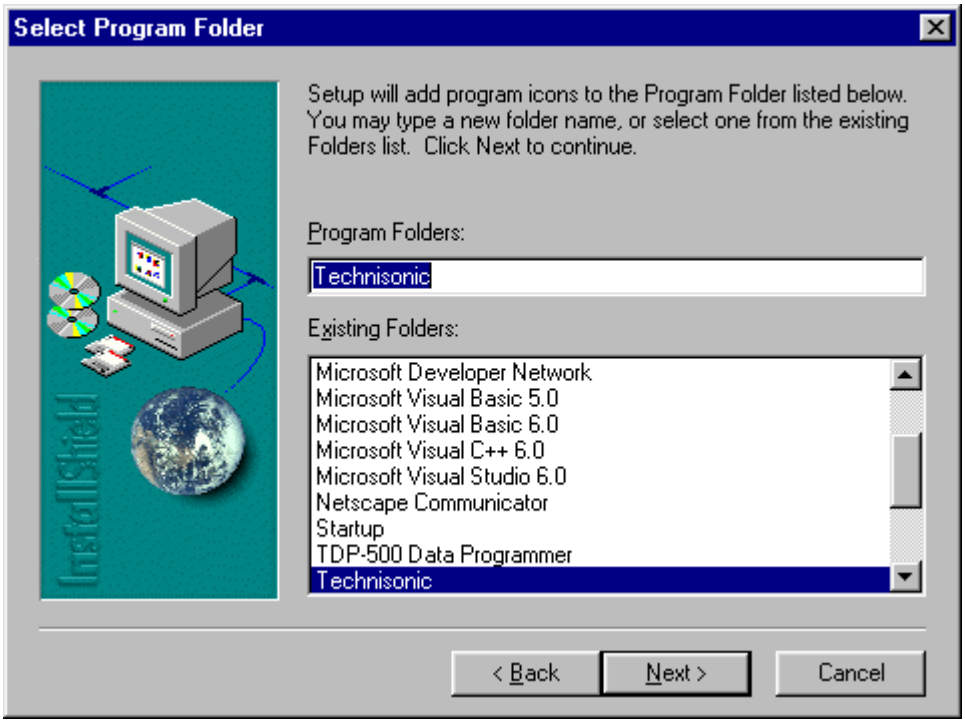

Figure 2.1.5 - Program Folder Dialog

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 PIB software.

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

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 3½" 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 PIB software.

3. To install the PIB software, locate the PIB100_Install.exe file on the CD-ROM using Windows Explorer. When you have located it, double-click it to start the setup process.

4. After the setup procedures finish unpacking the software, the welcome dialog box will pop up with the option to continue (by clicking on the Next> button see Figure 2.1.2)

5. Before you can continue, you will have to agree to the terms of the License Agreement (Figure 2.1.3) by clicking OK.

6. The next dialog box will be the “Choose Destination Location” dialog box (Figure 2.1.4). 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.

7. The PIB installation will ask in which Start menu Program Group you want the PIB software shortcut installed (Figure 2.1.5). Click Next if the default Program Group name is satisfactory.

The PIB software is now installed and ready to use with the PIB-100 interface box.

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 PIB software.

1. To install the PIB software, locate the PIB100_Install.exe file on the CD-ROM using Windows Explorer. When you have located it, double-click it to start the setup process.

2. After the setup procedures finish unpacking the software, the welcome dialog box will pop up with the option to continue (by clicking on the Next> button see Figure 2.1.2)

3. Before you can continue, you will have to agree to the terms of the License Agreement (Figure 2.1.3) by clicking OK.

4. The next dialog box will be the “Choose Destination Location” dialog box (Figure 2.1.4). 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 PIB installation will ask in which Start menu Program Group you want the PIB software shortcut installed (Figure 2.1.5). Click Next if the default Program Group name is satisfactory.

The PIB software is now installed and ready to use with the PIB-100 interface box.

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 PIB software, locate the PIB100_Install.exe file on the CD-ROM using Windows Explorer. When you have located it, double-click it to start the setup process.

2. After the setup procedures finish unpacking the software, the welcome dialog box will pop up with the option to continue (by clicking on the Next> button see Figure 2.1.2)

3. Before you can continue, you will have to agree to the terms of the License Agreement (Figure 2.1.3) by clicking OK.

4. The next dialog box will be the “Choose Destination Location” dialog box (Figure 2.1.4). 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 PIB installation will ask in which Start menu Program Group you want the PIB software shortcut installed (Figure 2.1.5). Click Next if the default Program Group name is satisfactory.
The PIB software is now installed and ready to use with the PIB-100 interface box.

2.2 HARDWARE INSTALLATION

1. Connect the cables as shown below and then connect to 24 volts.

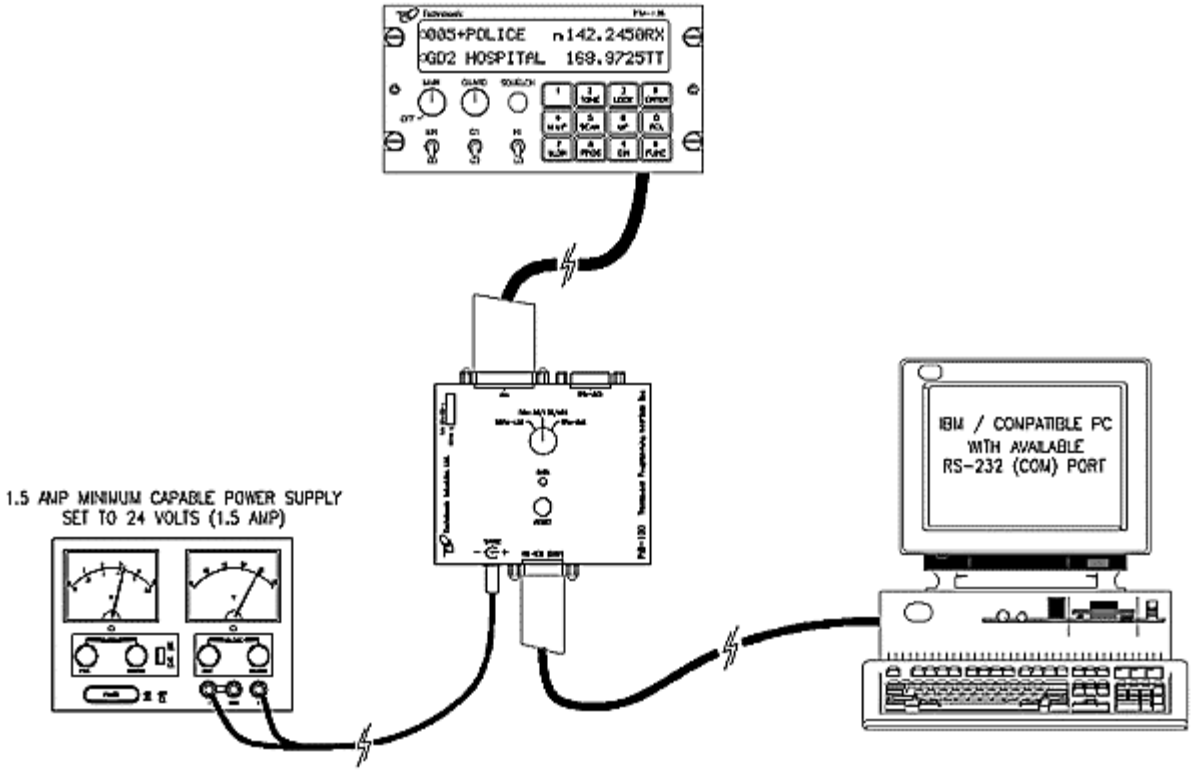

Figure 2.2.1 - Data and Power Cables

WARNING! – Do not connect or disconnect any of the cables while 24 volts are applied or damage to the PIB-100 interface box may result!

2. Turn on the radio and proceed with PIB-100 software.

3. When finished, turn off the radio and disconnect the 24 volts before disconnecting any cables.

3 SECTION

OPERATING INSTRUCTIONS

3.1 GENERAL

This section contains instructions for the correct operation of the PIB-100 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 PIB software version.

3.2 GETTING STARTED

To start the PIB-100 in Windows, simply click the Start menu-> Programs-> Technisonic->PIB-100 (this is the default location). The program will start, and the following program window should open up. The Current version number is in square brackets in the Title Bar.

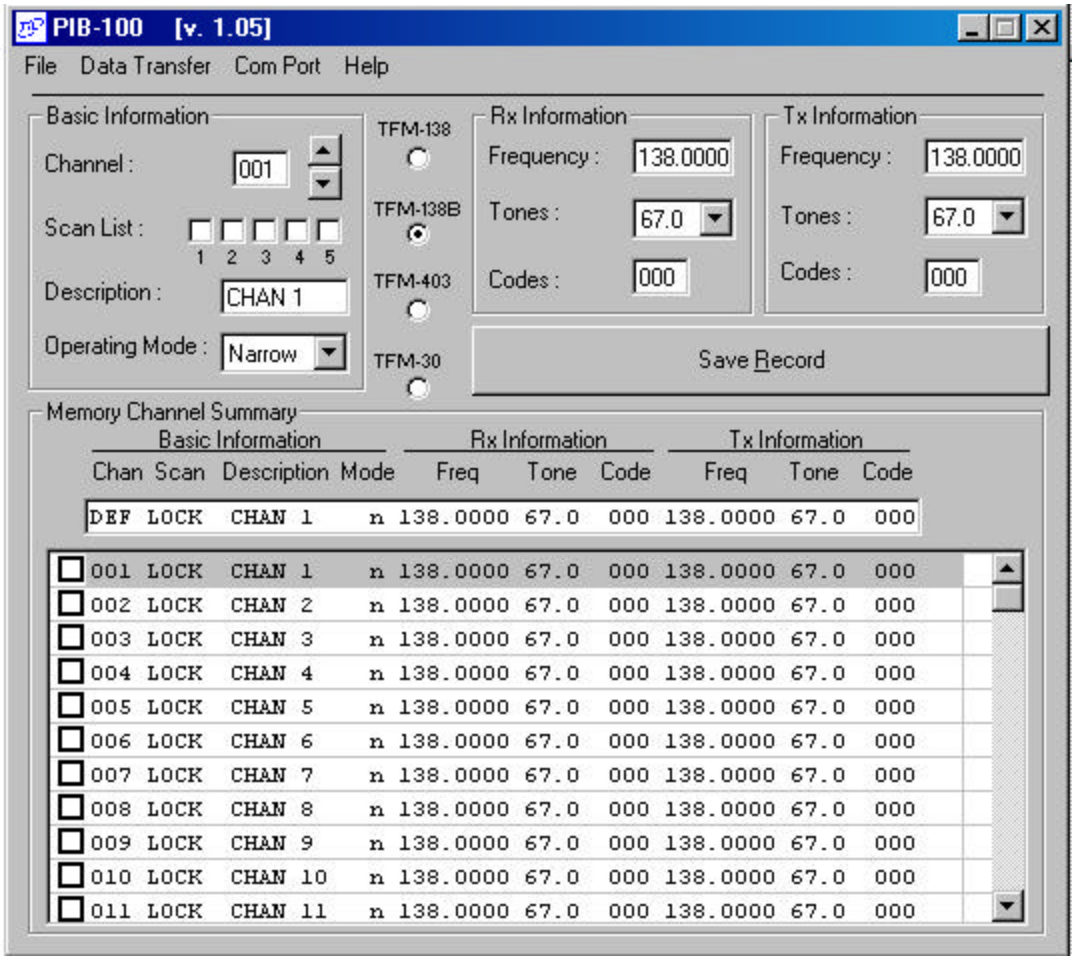

Figure 3.2.1 - Program Window

Note: ** Use of a mouse is highly recommended! ** It is possible however, to use both Windows itself, and the PIB 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. e.g.: [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 transceiver model you have currently selected will be displayed. In this instance the user saved file tfm138b1.100, is shown in the Program Title Bar. No filename will be displayed on initial program startup. When you select the another transceiver model, assuming there is a user data file loaded, the title bar will display the name of the 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, Com Port, and Help).

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.

The **Channel** box displays the currently active channel. Valid entries are DEF, 1 through 100 or 120 (depends on the selected transceiver mode), 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.

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.

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.

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) a through z, and !. All other (invalid) characters will be ignored. As a courtesy, the PIB-100 will automatically change any alphabetic keystrokes to upper case automatically, independent of the state of the shift, or Caps-Lock keys.

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 is 12.5kHz.

Figure 3.3.1.2 - Basic Information - DEF

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 Transceiver Selector

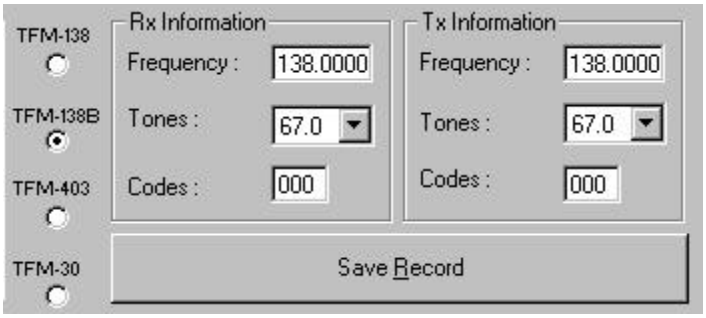

Figure 3.3.2 - Transceiver Selector

TFM138 - The TFM138 (VHF band) mode sets the frequency limits of the PIB-100 software from 138.0000 to 174.0000 MHz. The PIB-100 has 100 memory channels and 2 guard channels available for this mode. There are no DPL codes.

TFM138B - The TFM138 (VHF band) mode sets the frequency limits of the PIB-100 software from 138.0000 to 174.0000 MHz. The PIB-100 has 120 memory channels and 2 guard channels available for this mode.

TFM403 - The TFM403 (UHF band) mode sets the frequency limits of the PIB-100 software from 403.0000 to 512.0000 MHz. The PIB-100 has 120 memory channels and 2 guard channels available for this mode.

TFM30 - The TFM30 (VLO band) mode sets the frequency limits of the PIB-100 software from 30.0000 to 50.0000 MHz. The PIB-100 has 120 memory channels and 2 guard channels available in this mode.

3.3.3 Rx Information

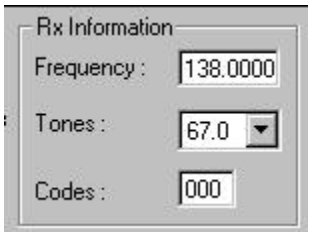

Figure 3.3.3 - Rx (Receive) Information

Frequency - The Frequency box determines the receive frequency. The Program will ignore invalid keystrokes, and will automatically limit your frequency entry to follow the Wide (0.0250 MHz) or Narrow (0.0125 MHz) rules which you defined under Operating Mode (E) of the Basic Information frame (3.3.1).

Tones - 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.

Codes - 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

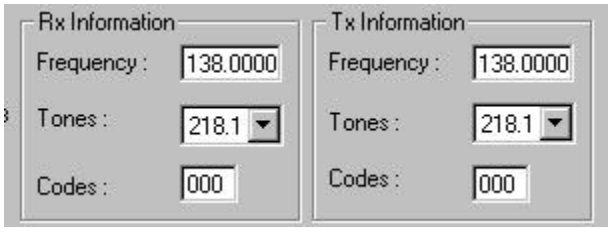

Figure 3.3.4.1 - Tx (Transmit) Information - Simplex

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.

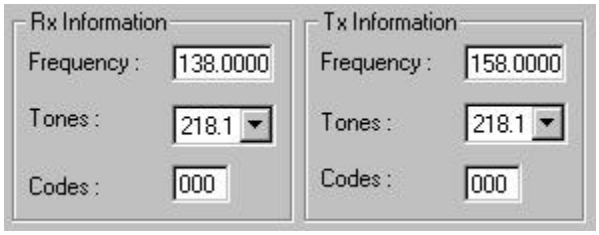

Figure 3.3.4.2 - Tx (Transmit) Information - Split Pair

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 PIB 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 PIB 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

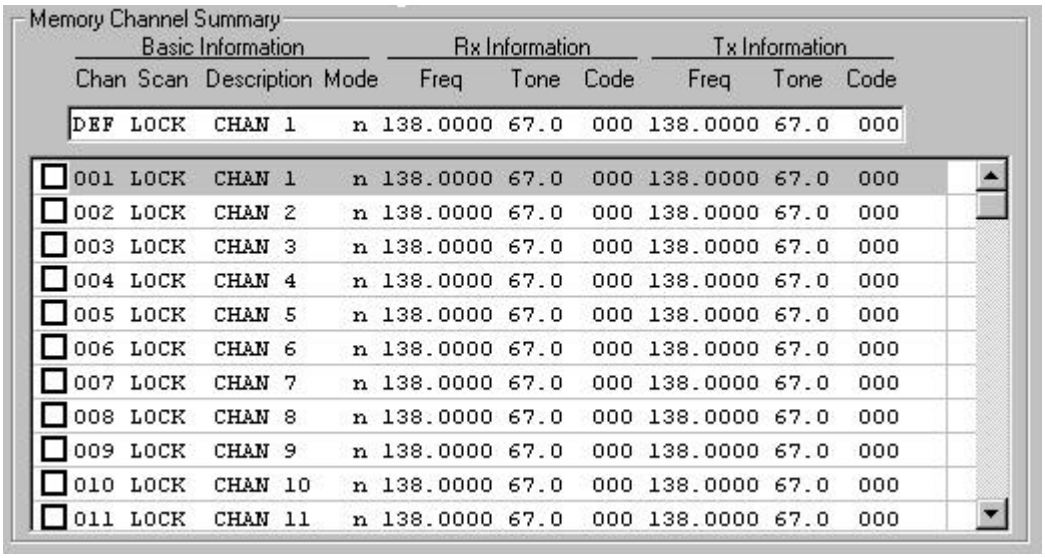

Figure 3.3.6.1 - Memory Channel Summary Window

The Memory Channel Summary window displays the currently stored settings for all of the 100 or 120 channels for TFM138 and TFM138B|TFM403|TFM30 respectively, and 2 GUARD channels. 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 each transceiver 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.

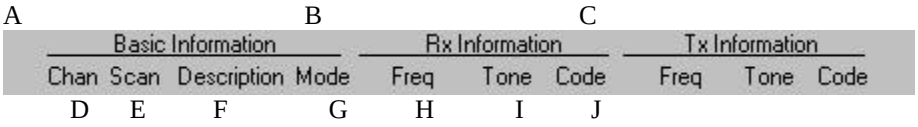

Figure 3.3.6.2 - Memory Channel Summary Window Header

A - All information under this heading represents the Basic Information configuration for each of the 102 / 122 channels. See 3.3.1

B - The Receive settings for the 102 / 122 channels are arranged in columns under this heading. See 3.3.2

C - All the Transmit settings for the 102 / 122 channels are arranged in columns under this heading.

D - Chan represents the channel number, 0 to 100 / 120 and GD1/GD2 .

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.

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.

The checked check-box indicates a channel whose data is to be updated in the connected PIB-100 during download.

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 PIB-100 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 transceiver and quit the PIB software.

3.4.1 File Menu

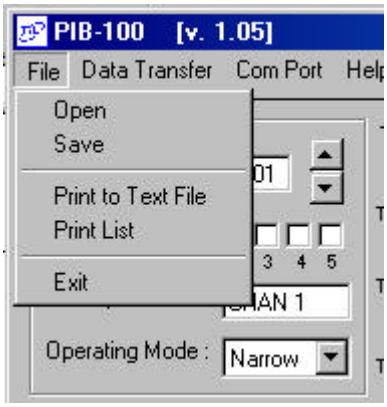

Figure 3.4.1 - File

Open will bring up the Open dialog box to allow you to select an existing file to load with a .100 extension.

Save 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 .100 will be automatically appended to the filename (e.g.: Dataset1.100).

The **Print to Text File** 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.

The **Print List** function will print the contents of all 100/120 channels plus GUARD channels for whichever target transceiver type you have selected, as they appear in the Memory Channel Summary window. As a courtesy, each printed page will have the description heading for each data column.

Exit will quit the PIB-100 program. If you have not saved your data, or if any changes were made to your data set since your last save, the PIB will warn you of this, and allow you to do so before quitting.

3.4.2 Data Transfer Menu

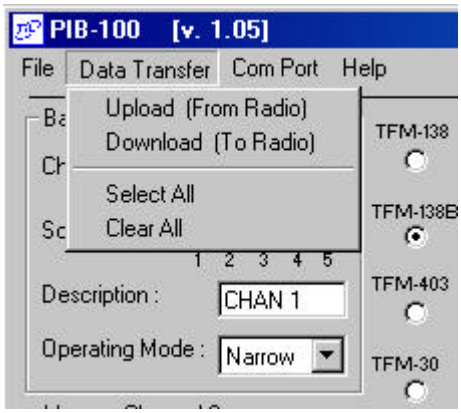

Figure 3.4.2.1 - Data Transfer

Upload (from Radio) instructs the PIB-100 program to wait for and read in the channel data from the transceiver connected to the Pib-100 Interface Box.
IMPORTANT: You must click this BEFORE instructing the connected Transceiver to SEND the channel data

Download (to Radio) instructs the PIB-100 program to send the channel data from the TFM transceiver connected to the Computer's COM Port.

Select All marks all channels for download to the transceiver. In the Channel Summary window, all channels will be marked with a 'check' to the left of the channel number. All channel data will be updated to the TFM radio connected to the PIB interface, during the download process.

Clear All un-selects all channels in the Channel Summary window. Any channel not marked with a 'check' will NOT be updated during the Download process.

Figure 3.4.2.2 - Press Enter Dialog

When Uploading/Downloading channel data from the transceiver, this dialog box will pop up asking you to press Func 9 button on the TFM radios. The transceivers will wait for Func 9 to be pressed before sending data to the PIB-100 software.

3.4.3 COM Port Menu

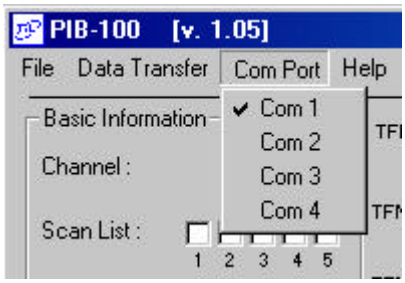

Figure 3.4.3 - COM Port

This selects the COM (RS-232 Serial communications) port on your computer, to which the PIB-100 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 PIB-100 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 PIB-100 software is run, the COM port you chose, will be selected.

3.4.4 Help Menu

Figure 3.4.4 - Help Menu

PIB-100 Help Contents will start the Windows Help dialog for the PIB-100 software.

Documentation in pdf format will open a printable manual for the PIB-100 software in Adobe pdf format.

Technisonic on the Web provides a link to the company web site.

About PIB-100 dialog box displays Technisonic Company and contact information as well as the Revision number of the PIB software.

3.5 RS-232 SERIAL TECHNICAL DATA

The PIB-100 software communicates with a connected TFM transceiver at 9600 Baud, 8 Data bits, and no Parity and 1 Stop bit. The PIB 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.