ADL Access User Guide – Dealer Version

1/27/09

A. Front Cover
B. Title Page
C. Copyright page
D. TOC
E. Introduction
   ADL Access is a Microsoft Windows software utility used to configure Pacific Crest's Advanced Data Link (ADL) radio modems. It ships with all radio modems in the ADL family and is available for free download from the Pacific Crest website. This user guide describes the various ADL Access features and how to get additional product support for ADL Access and ADL radio modems.

   The version of ADL Access available with the modems and from the website in copyrighted but not copy-protected. When you insert an ADL Access Dealer Version software key into your PC's USB port and launch ADL Access, an additional tab labeled **Dealer** is activated. The features on the Dealer tab, described toward the end of this User Guide, are not visible or accessible without first installing the Dealer Version software key.

F. Installing ADL Access
   Insert the ADL Access CD into your PC. After a few seconds, the installation application will launch and guide you through the installation process. You may alternatively insert the CD, click the Windows **Start** button, click **Run**, type D:setup.exe (where D is the name of your CD drive) in the input field and click **OK**.

G. Running ADL Access
   You can launch ADL Access in the following ways:
   a. Double-click the ADL Access icon on your desktop
   b. Click Start > All Programs > Pacific Crest Corporation > ADL Access > ADL Access
   c. Click Start > Run , type C:/Program Files/Pacific Crest Corporation/ADL Access.exe in the input field and click OK
   If you have trouble running ADL Access on a 64-bit PC with Windows Vista, try the following:
   a. Close ADL Access
   b. Double-click on My Computer on your desktop or run Windows Explorer
   c. Navigate to C:/Program Files/Pacific Crest Corporation/ADL Access/ and right-click on ADL Access.exe
   d. Click Properties
   e. Click the Compatibility tab
   f. Click "Run this program in compatibility mode for:"
   g. Select Windows XP or Vista 32
   h. Click OK on the bottom of the ADL Access.exe properties window

i. Re-launch ADL Access

H. ADL Access Menus
   a. File
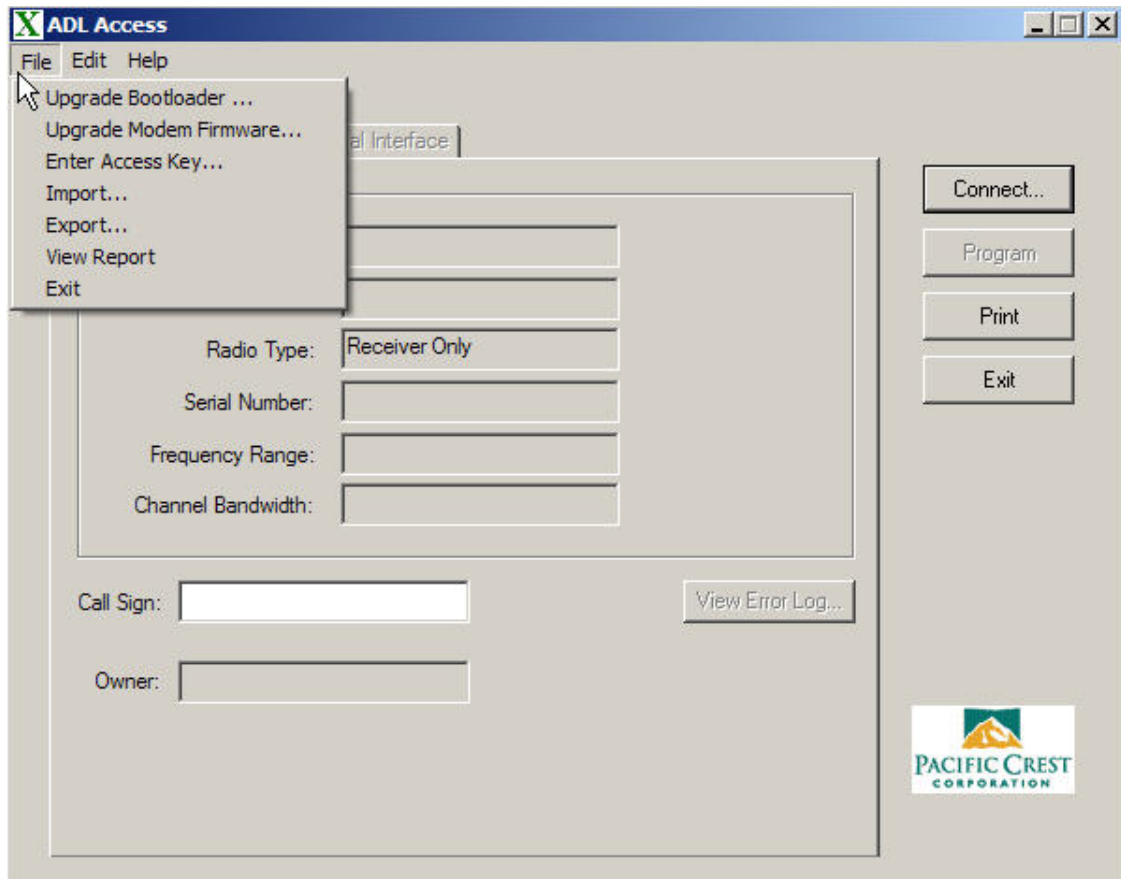

       i.   Click on **File** to access a variety of functions
       ii. The **Upgrade Bootloader** option allows you to select a bootloader firmware
            file to upload into the attached ADL radio modem. This is a low-level
            firmware application that launches the main radio application.
       iii. The **Upgrade Modem Firmware** option allows you to select a *.bin file to
            upload the main radio application into the attached ADL radio modem**.**
       iv. The **Import** option allows you to import radio configuration files with the
            *.dat file extension from your PC to ADL Access. Clicking the Program
            button on the right of the main ADL Access screen will then upload the
            configuration to the attached radio overwriting the existing configuration.
       v.   The **Export** option allows you to export the radio configuration displayed in
            ADL Access to a *.dat file on your PC. This allows you to create one
            configuration and copy it into multiple radios. Note: when you export a
            configuration you are only creating a *.dat file. To configure a radio, you
            must display a configuration on ADL Access (either by creating it using the

utilities described below or by importing an existing configuration) and then click the Program button.

vi. The **View Report** option allows you to view on a web browser all the configuration parameters of the attached radio. In addition, this html-formatted report displays certain firmware settings that can help Pacific Crest support technicians diagnose certain problems in the event that the radio requires service.

vii. Clicking the **Exit** option exits the program.

b. Edit
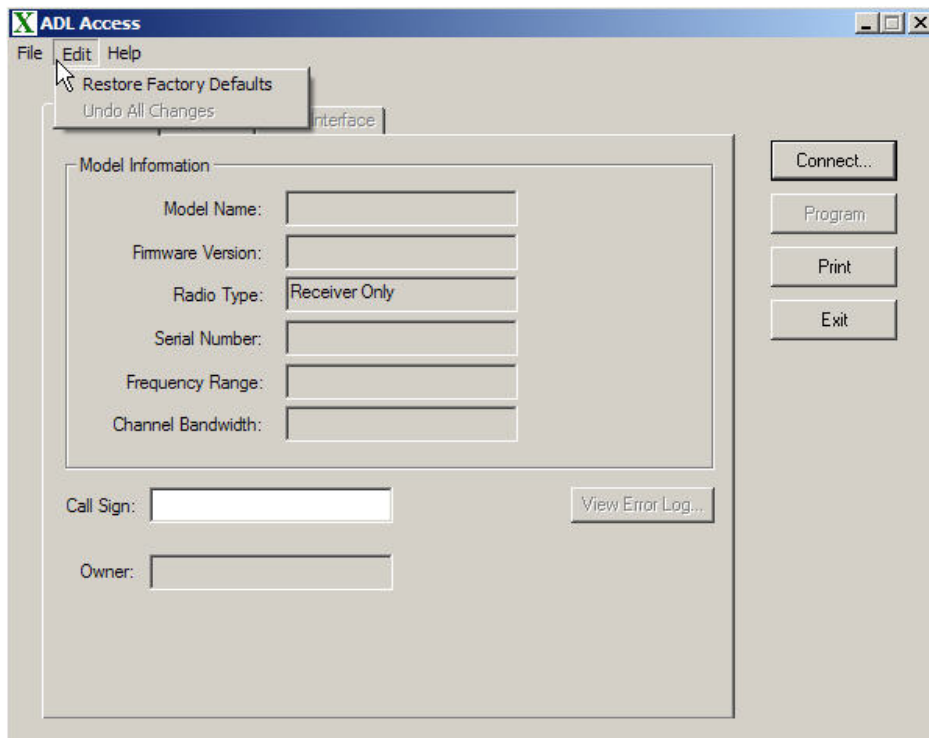
i. When you select the **Restore Factory Defaults** option you are asked to first connect to a radio (unless you are already connected).
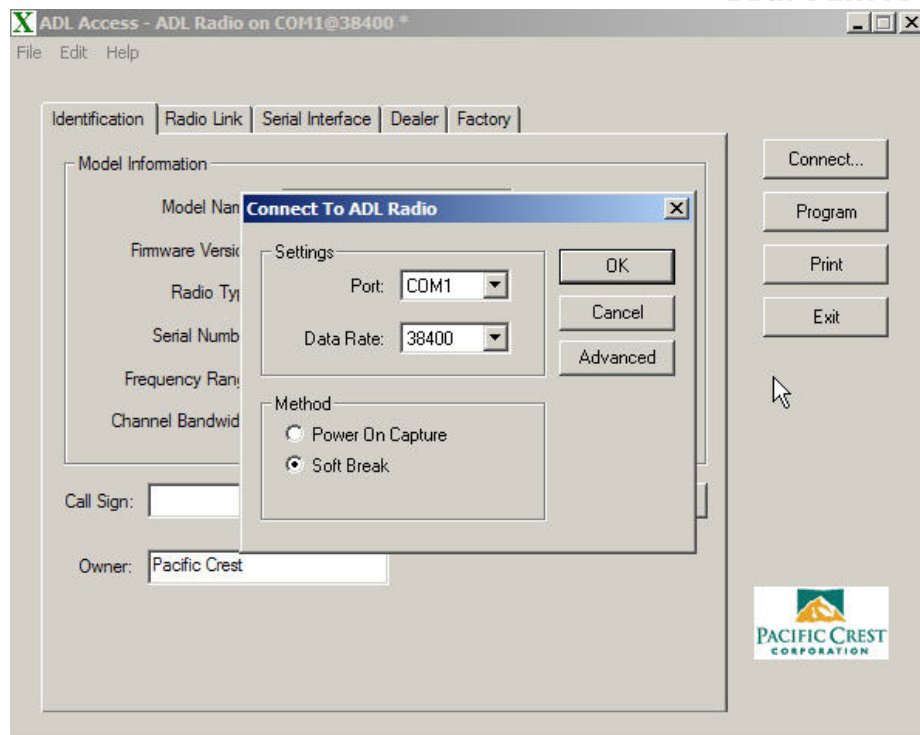
Clicking **OK** on the **Connect to ADL Radio** screen restores the attached radio to the factory default settings. Click **Cancel** on the **Connect to ADL Radio** screen to leave the settings the way they are.

ii. Clicking **Edit > Undo All Changes** voids all the configuration changes you have made during this session. All parameters on all ADL Access screens are reset to those that were there when you started this session. Clicking **Undo All Changes** does not affect any settings in the radio or any configuration file on your PC. Note: The only way to change the configuration of the radio is to first make them in ADL Access and then click the **Program** button to the right of the main screen.

c. Help
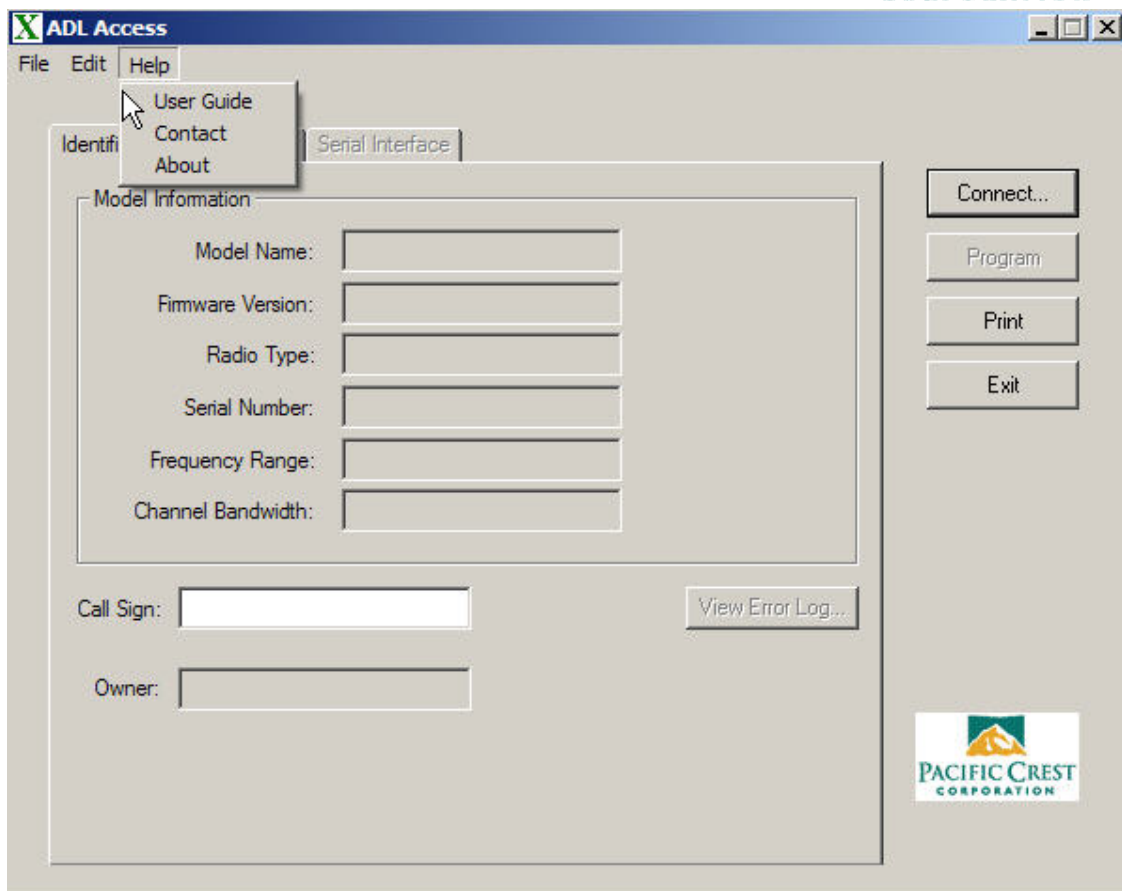
    i. Click **User Guide** to view a copy of the ADL Access User Guide. Note: you must have previously installed a copy of Adobe Acrobat or Adobe Reader to view the User Guide. A free download of Adobe Reader is available from http://www.adobe.com/products/acrobat/readstep2.html.

    ii. Click **Support** to access links to Pacific Crest Technical Support and the Pacific Crest website.

    iii. To see which version of ADL Access is installed on your PC, click **Help > About**.

I. Connecting the Radio

    a. Launch ADL Access by double-clicking the program's icon on your PC's desktop or by clicking the Windows **Start** button, clicking **Run**, typing "C:/Program Files/Pacific Crest/ADL Access.exe" and clicking **OK**.

    b. Connect the ADL radio to your PC's serial port using the programming cable that came with the radio. If your PC does not have a serial port, connect the radio's programming cable to a serial-to-USB adaptor cable such as an IOGEAR Model GUC232A. Note: ADL Access is designed for communication only with Pacific Crest ADL radios. You must use PDLCONF or RFMCONF to link to Positioning Data Link (PDL) or RFM radios. These programs are available for free download from http://www.pacificcrest.com/tech_support/updates.shtml.

c. Turn on the radio.
d. On ADL Access, click the **Connect** button in the upper right of the screen.
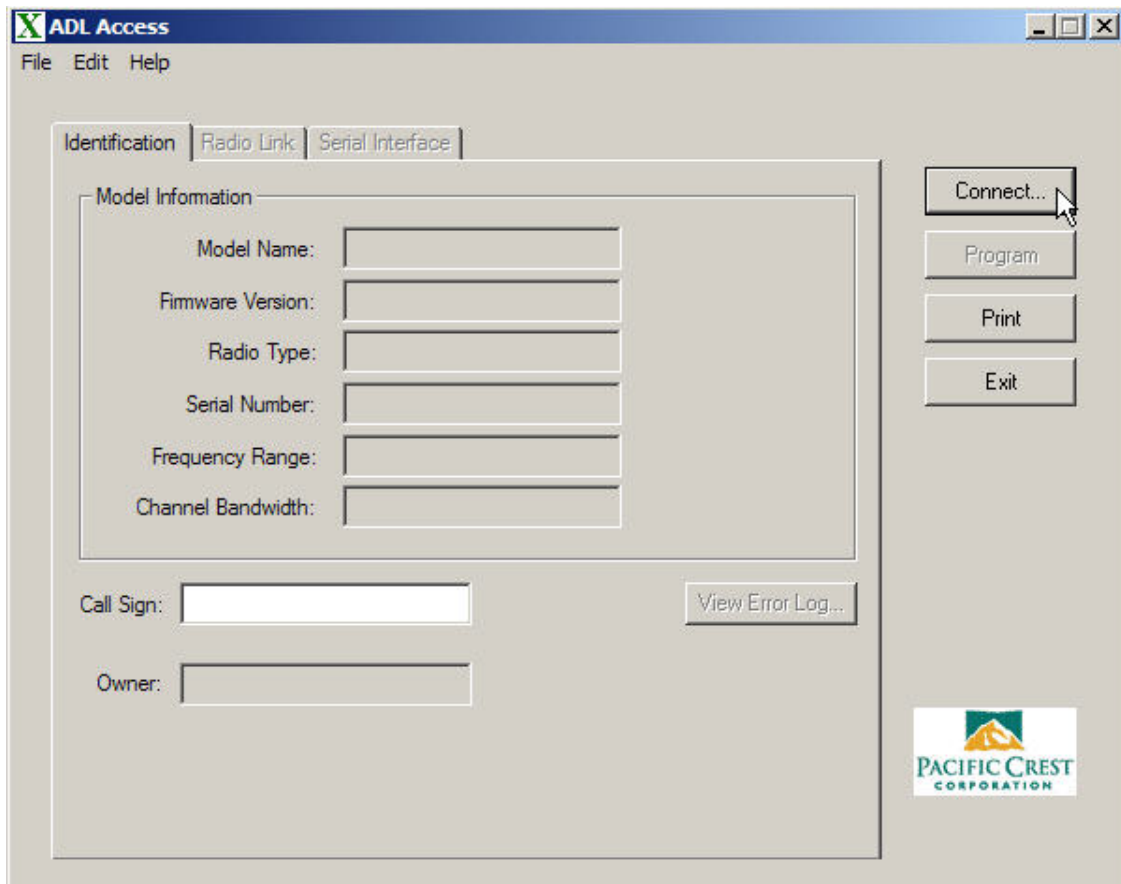
⚠ Important Note: ADL Access is like most Microsoft Windows programs in that when you launch the program, it displays a blank file. Clicking the **Connect** button not only connects ADL Access to the radio but also opens a file in the PC's RAM memory containing the radio's parameters. If you edit any parameters, the changes are made only to the version of the parameter file in your PC's RAM. This is exactly the same as when you open a document or spread sheet with Microsoft Word or Excel: the file is copied to RAM and you make the edits to this RAM copy. If the file displayed on ADL Access has been edited an asterisk appears next to the file name at the top of the screen. To save any changes to an ADL Access file to your hard drive, click **File > Export** (see above). To save any parameter changes to the radio click the **Program** button on the right-hand side of the screen.

Whenever ADL Access connects to a radio, it copies the radio's parameters to the PC's RAM and overwrites any other parameters that may be currently displayed. If you had made any edits to the copy of the file in RAM memory and then click

Connect, ADL Access does not ask you if you want to save the parameters from RAM to a file on your hard drive.

e. On the **Connect to ADL Radio** screen, click the down arrow to the right of the **Port** field and select the COM port to which the radio is connected.
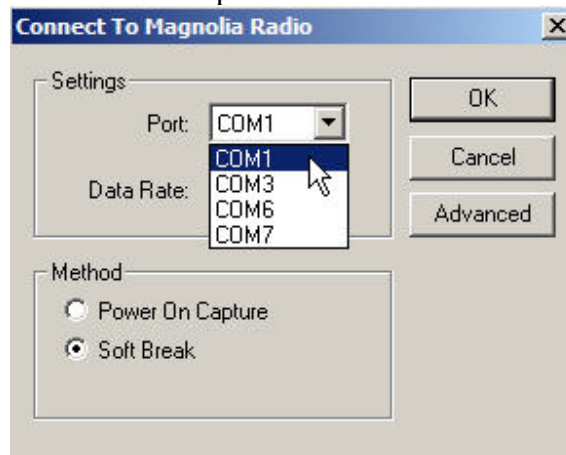
f. With the default connection method selected (**Soft Break**), click **OK** on the **Connect to ADL Radio** screen.
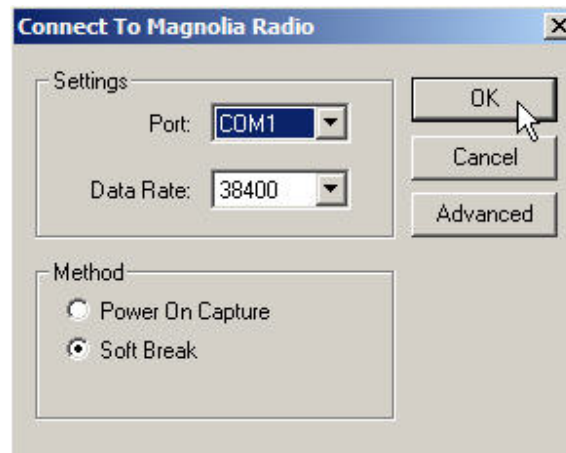
g. When you select the Soft Break method, the radio should be turned on. When you click **OK** on the **Connect to ADL Radio** screen ADL Access will send a "soft break," i.e., the ASCII string "+++" at the configured baud rate. This will put the radio into command mode to accept commands. This is the default method for connecting to the ADL radio.

⚠ Note: If the ADL radio was previously connected to any external device (e.g., a PC, a GPS receiver or a measurement device) using a different data rate other than the rate displayed on the **Connect to ADL Radio** screen, ADL Access will detect non-communication at the displayed rate and cycle through the other rates in order to establish a connection. Some versions of Windows and serial

communications drivers can prevent this connection, however. If communication fails:
- o Turn off the radio
- o Detach it from the PC
- o Re-attach it *but do not turn it back on*
- o Use the **Power On Capture** method for connection (see below).

h. An alternative to the **Soft Break** method for connection is the **Power On Capture** method. To use this method, turn the radio off, select **Power On Capture** on the **Connect to ADL Radio** screen and click **OK**. You must now turn on the radio within 10 seconds. During this 10-second window of opportunity the ADL radio will accept a packet switch command (at the baud rate selected in the **Connect to ADL Radio** screen's **Data Rate** field) that will put the radio into command mode.
If for some reason neither the **Soft Break** nor the **Power On Capture** method works, turn the radio off, click the **Advanced** button on the **Connect to ADL Radio** screen and click **Bootloader Power On Capture** option.
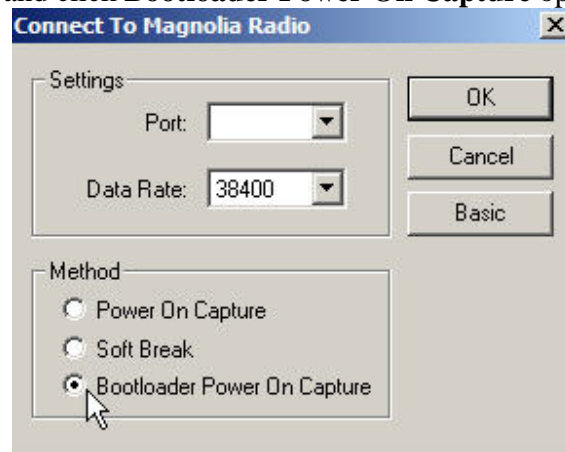

When you click **OK** on the **Connect to ADL Radio** screen you must turn the radio on within 10 seconds. During this 10-second window of opportunity the ADL radio's bootloader firmware will put the bootloader into monitor mode that will accept commands.

i. Running ADL Access in Demo Mode
You can run ADL Access without connecting it to a radio by running it in Demo Mode. Start ADL Access, press **Alt-D** and click **Connect**. ADL Access will use a pre-set demonstration radio configuration so you can view the program's various features and settings as though you were connected to a radio. You can also load an existing radio's configuration file (*.dat) to simulate being connected to that radio.

J. Identification Screen

a. Connecting to the radio displays the ADL Access **Identification** screen.
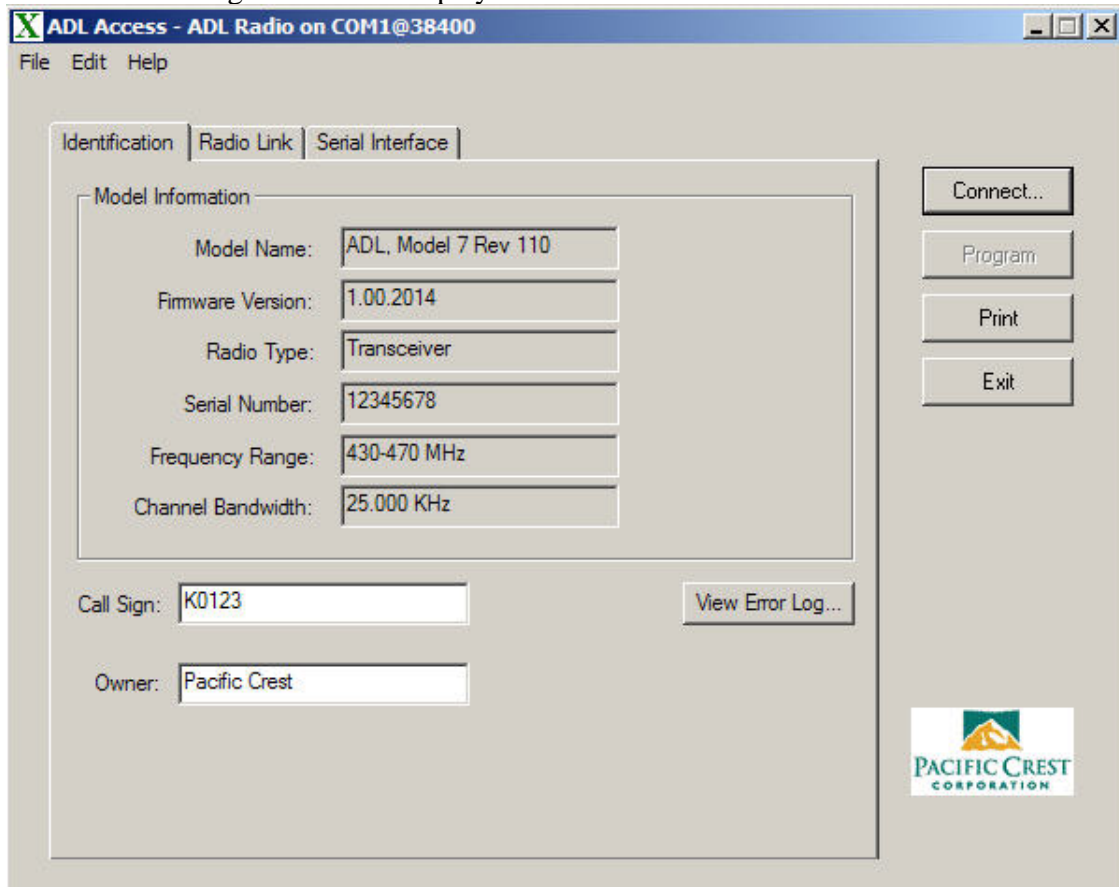
This screen shows the current configuration of the attached radio:
- Model Name
- Firmware Version
- Radio Type ("Transceiver" or "Receiver Only")
- Serial Number
- Frequency Range
- Channel Bandwidth (12.5 and 25 kHz)

These fields are not editable.

b. The **Identification** screen also allows you to type in a **Call Sign** and **Owner** name. To save the call sign and owner name to the radio, press the **Program** button on the right. ADL Access will inform you if the radio was reprogrammed successfully.
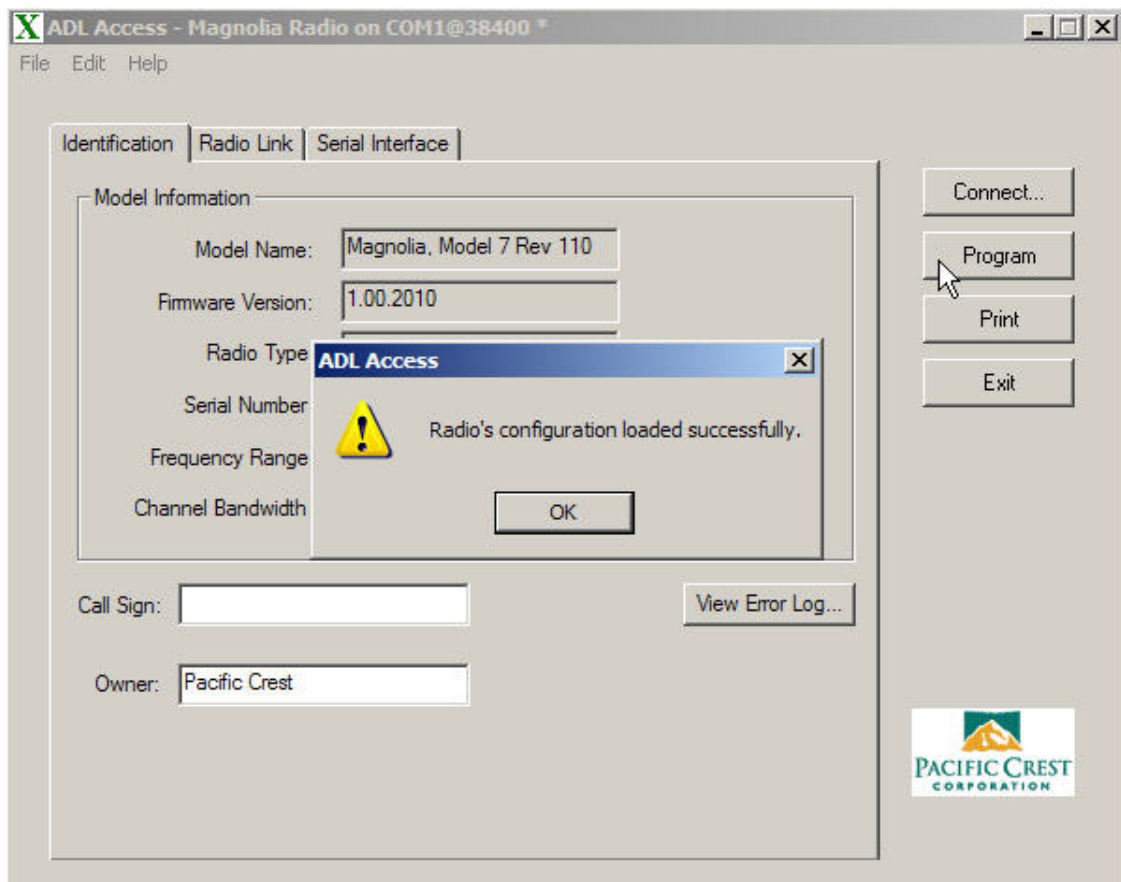
To save any configuration changes to the radio, click the **Program** button. To save any configuration changes to a file on your PC, click **File > Export**.

c. ADL radio modems record error logs in the field whenever the modem experiences an abnormality. To view this log, click **View Error Log** to the right of the **Call Sign** field.
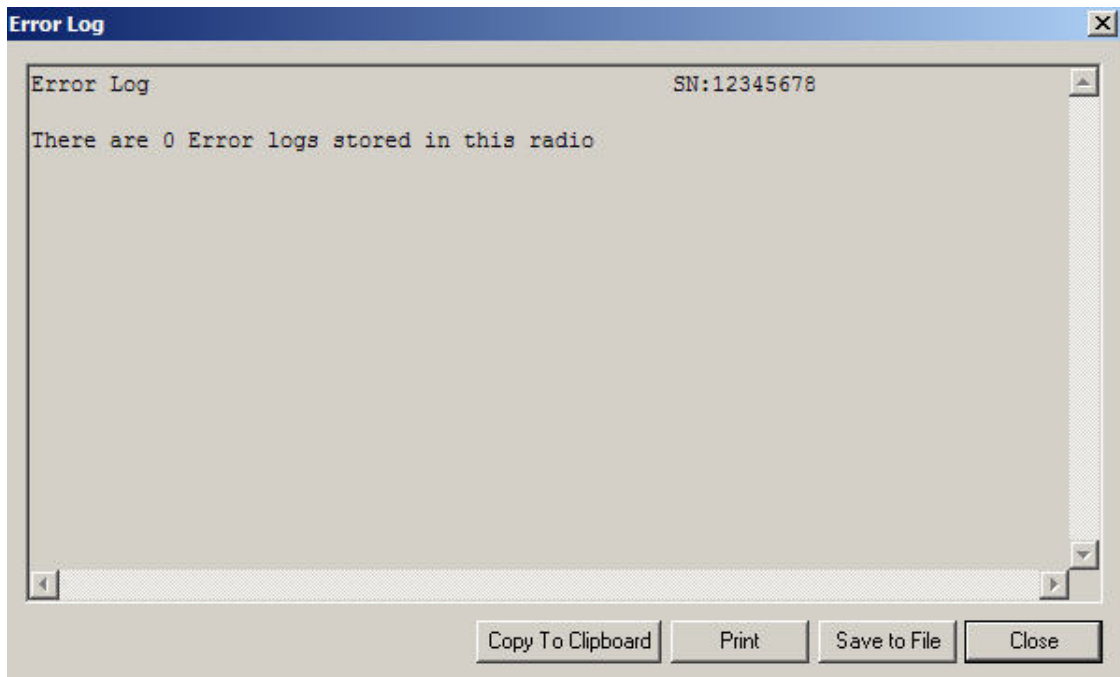
Your options are to copy the error log to your PC's clipboard for pasting into other documents, printing the error log to the printer accessible to your PC, or saving the log to a file on your PC.

K. Radio Link Screen

Clicking the Radio Link screen displays the **Radio Link** screen:
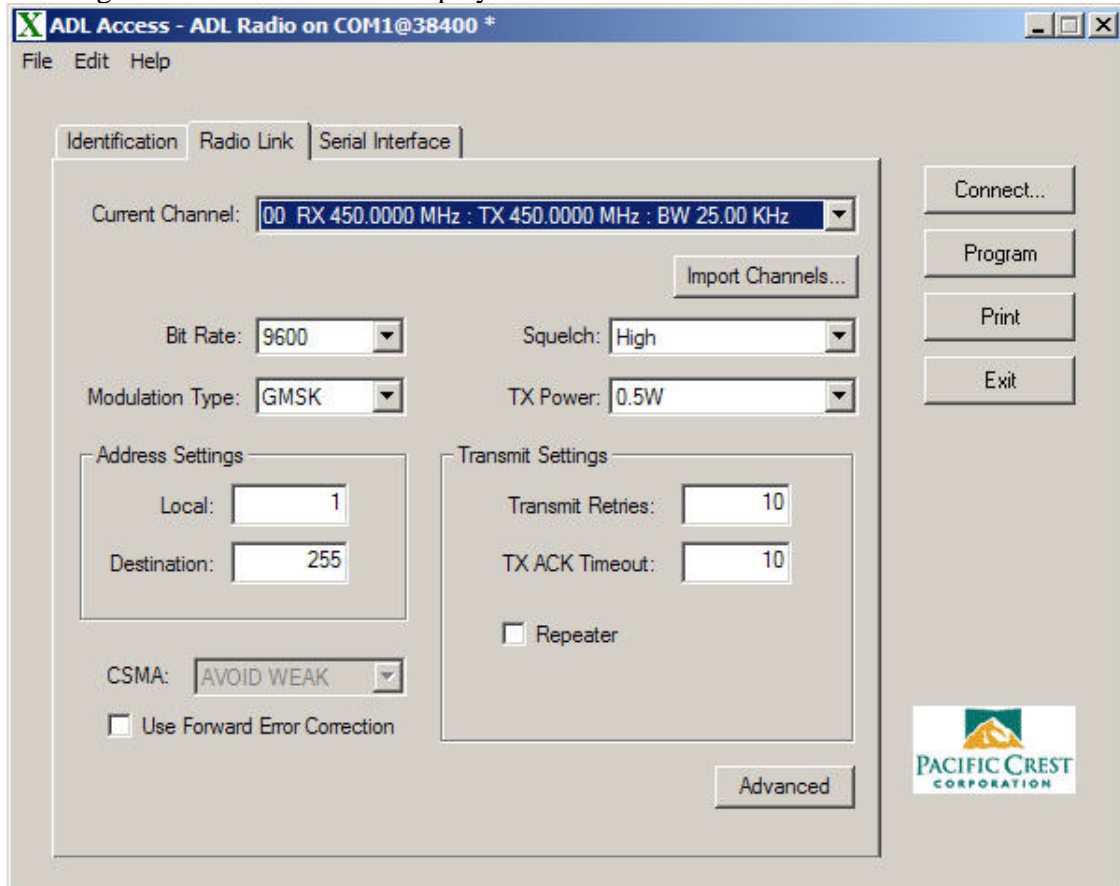
a. Current Channel field

Channel tables are lists of radio parameters comprising a channel number, a frequency at which the radio will receive data, a frequency at which the radio will transmit data (which may be different from the receive frequency) and a channel bandwidth (which can be either 25 kHz or 12.5 kHz). Your dealer should have uploaded a channel table into ADL radios prior to delivery. You therefore do not need to import a channel table in order to get full use of your ADL radio.

Your channel table can comprise more than one channel, but the radio can be set only to one channel at a time. The Current Channel field indicates the current setting.

Click the down arrow to the right of the Current Channel field to display all the channels in your channel table. To select another channel, simply click on it.
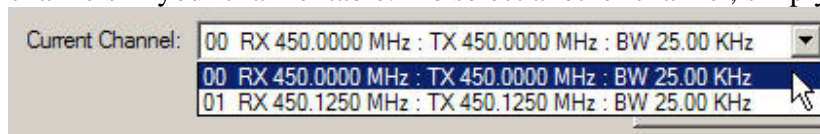
Note: your radio will not be set to this new channel until you click the **Program** button.

While all ADL radios can be reconfigured using ADL Access, some models have user interfaces that allow you to select other channels on the front of the radio while others can be reconfigured *only* using ADL Access.

b. Clicking the **Import Channels** button simply allows you to select any *additional* channel table your ADL radio modem by an authorized Pacific Crest dealer may have created for you. Channel tables are files with the *.frq file extension. If you did not receive a channel table with your ADL radio, please contact your dealer or Pacific Crest Customer Support.

NOTE: Government regulations do not allow the standard version of ADL Access to support the creation of channel tables. You must check with your dealer about obtaining new channel tables.

c. Bit Rate

The Bit Rate is the rate at which data bits are transmitted or received by the radio's modem. The radio must both receive and transmit at the same rate. The default bit rate for all ADL radios is 9600. To select a different rate, click the down arrow to the right of the Bit Rate field and click on a different value.
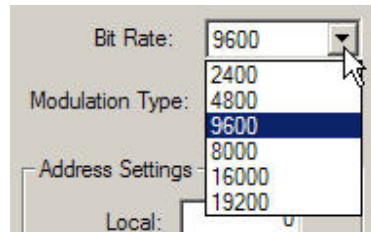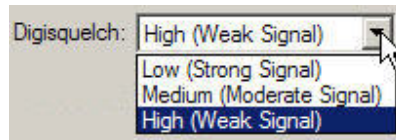

d. Squelch

ADL radios can be optimized for operation in environments with different levels of signal and noise by selecting different squelch levels. "Signal" is defined here as the data you want to receive; "noise" is defined as everything else. The squelch level is an amplitude threshold above which radio transmissions are passed and below which transmissions are rejected. One hopes the passed transmissions are signal and the rejected transmissions are noise. However, it is always possible in a working environment that noise will be greater than the signal. If so, you will have five choices:

- Switch to another frequency
- Decrease the distance between the transmitter and receiver
- Use a higher powered transmitter
- Use a more sensitive receiver
- Wait for the noise to abate.

Assuming your signal is greater than the ambient noise, it is still advantageous to set the squelch level as high as possible and thereby remove as much noise as

possible. To do this, click the down arrow to the right of the **Squelch** field and click on the desire noise threshold level:

I will need to make all new screen grabs once the SW is frozen. This screen must be replaced with one saying:
- "High (Base)"
- "Medium"
- "Low (Rover)"

In general, you should initially set **Squelch** to:
- **High** when the radio will mostly be transmitting data, (as with radios used to transmit RTK corrections from a GPS base station)
- **Low** when the radio will mostly receiving data (as with GPS rover radios)

However, you may need to adjust the **Squelch** setting as needed according to the level of environmental noise. Most ADL radios include a user interface that permits Squelch adjustment in the field without running ADL Access.

e. Modulation Type
ADL Access allows you to configure your radio for either Gaussian Minimum-Shift Keying (GMSK) modulation or 4-Level Frequency-Shift Keying (4FSK) modulation. The default is GMSK because GMSK is generally less sensitive to interference from environmental noise. 4FSK modulation, on the other hand, supports approximately twice the data throughput of GMSK. When you are using a bit rate above 9600, the general recommendation is to use 4FSK modulation. To switch to 4FSK modulation, click the down arrow to the right of the **Modulation Type** field and click **4FSK**:
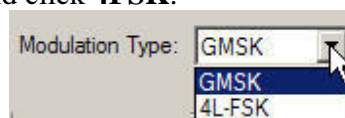
Note: not all data protocols support 4FSK modulation. If you select 4FSK modulation on the **Radio Link** screen, you will not be able to select an incompatible protocol on the **Serial Interface** screen (see below).

f. TX Power
If you purchased your ADL radios as a transceiver, you can configure it for various output power levels. To adjust the transmit power click the down arrow to the right of the **TX Power** field and select a different setting.
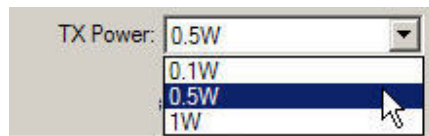
If the radio is a receiver-only, however, the **TX Power** field is grayed out. The **Radio Type** field on the Identification screen (see above) indicates if the radio is a transceiver or receiver only.

g. Address Settings

Use the **Address Settings** fields to set both **Local** and **Destination** addresses for any two Pacific Crest ADL transceivers to communicate exclusively with each other.

The main advantage of addressing is the ability to restrict the usage of transmitted data to a specified receiver. Any receiving "rover" radio with a **Local** address different from the transmitting "base" radio's **Destination** address will delete the data without repeating it over the air to other radios or sending it serially to an external device such as a GPS receiver. Addressing thereby allows multiple transceiver pairs to operate on the same channel without "seeing" each other's data. The tradeoff is the need for the addressed radios to have TX/RX capability.

The addressing feature only works between two radios. In addition, both of the radios must be configured for the Transparent EOT, Transparent EOC or Packet Switched protocols. (You select a radio's **Protocol Type** on the **Serial Interface** screen – see below.) The **Local** address of one radio must be the same as the **Destination** address of the other radio, and vice versa. For example, a radio with Local=X and Destination=Y will be able to communicate only with another radio with Local=Y and Destination=X.

To select a **Local** or **Destination** address, click the appropriate field and type in a number between 0 and 254. You can input only one **Local** and only one **Destination** address into any one radio.
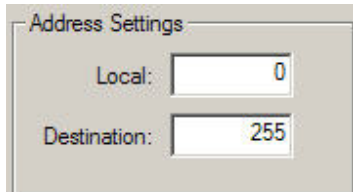
Selecting 255 for the **Destination** address is a special case designated as "broadcast mode." When 255 is selected as a radio's **Destination** address, all Pacific Crest radios sharing the channel – regardless of their **Local** address – will be able to receive the data transmissions and either repeat them over the air to other radios or send them serially to an external device.

The default **Local** address number is 0 and the default **Destination** address number is 255. If you are not using Transparent EOT, Transparent EOC or Packet Switched protocol (selected on the **Serial Interface** screen - see below), do not change these defaults.

⚠ Note: This Local=0/Destination=255 combination is the only selection that works with receive-only rovers.

h. Transmit Settings
The **Transmit Settings** section of the **Radio Link** screen allows you to configure three aspects of the radio's transmitter: Transmitter Retries, TX ACL Timeout and whether to set the radio to act as a repeater.

If you have selected **Transparent EOT**, **Transparent EOC** or **Packet Switched** protocol on the **Protocol Type** field of the **Serial Interface** screen (see below), the **Transmit Retries** and **TX ACK Timeout** fields appear in the **Transmit Settings** box. These protocols call for the "rover" radio to transmit an acknowledgement packet ("ACK") for each packet that is correctly received from the "base" radio. The base radio will retransmit the data packet a specified number of times (the **Transmit Retries** value) if it does not receive the ACK packet from the rover within a specified number of milliseconds (the **TX ACK Timeout** value). This ensures 100% data transfer during periods of intermittent interference.
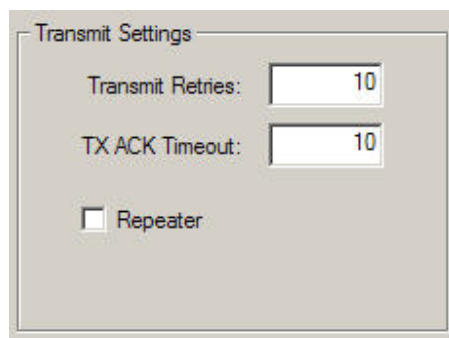
If you have not selected **Transparent EOT**, **Transparent EOC** or **Packet Switched** protocol on the **Serial Interface** screen, the **Transmit Retries** and **TX ACK Timeout** fields are not displayed:
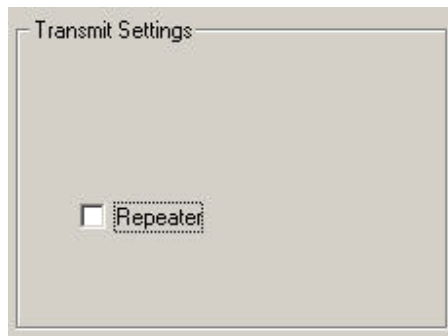
Click the **Repeater** check box to set up the radio to act as a repeater, i.e., to automatically transmit the data it receives. Clicking this check box reveals the **Repeater Delay** field where you enter the amount of time in milliseconds you want to elapse between receipt of a data packet and its retransmission.
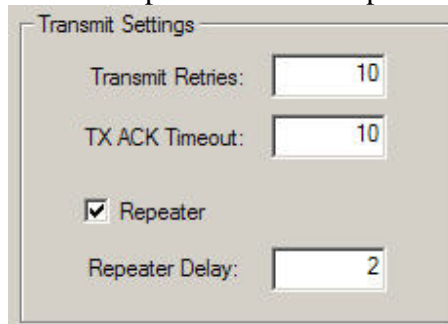
The default is 2 ms.

i. CSMA
When the **CSMA** (Carrier Sense Multiple Access) feature is turned on, the radio will "listen" on the selected transmission frequency for any broadcasts. (The selected transmission frequency is indicated in the **Radio Link** screen's **Current Channel** field.) If no broadcasts are detected, the radio will be allowed to transmit. If a signal is detected, the radio will wait until there are no broadcasts for 3.3 milliseconds.
ADL radios have CSMA turned on prior to shipment to those countries, such as the United States, where CSMA is legally required. If the **CSMA** box is checked, it is also grayed out. The radio must be returned to Pacific Crest to turn **CSMA** off.

j. Forward Error Correction Type
Using **Forward Error Correction** places extra bits in the transmitted data so receiving ADL radios can check for transmission errors. Although data throughput is adversely affected by **Forward Error Correction**, it can greatly improve range and so is strongly recommended.

Note: the **Forward Error Correction** option is grayed out when using Trimtalk protocol, which does not support Forward Error Correction. To select the protocol type, click the **Serial Interface** screen (see below).

    k. Advanced Settings
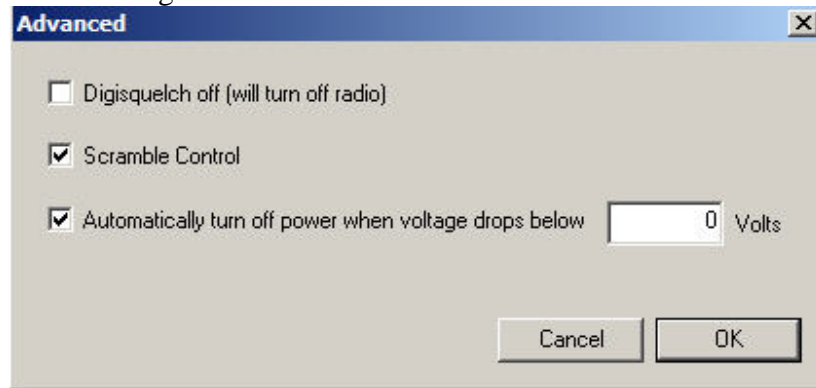
      i. Squelch off
Some ADL radio users perform tests that require communication with the radio while its transmitter/receiver is turned off. By turning **Squelch** off, the radio's transmitter/receiver is turned off.

      ii. Scramble Control
This is a low-level security technique that will scramble your data (i.e. encode it) prior to transmission and decode it after reception. This will prevent nearby non-authorized radios from reading your transmitted data. **Scramble Control** works only with the Transparent (EOT and EOC) and Packet Switched protocols selected on the **Serial Interface** screen (see below). Only Pacific Crest PDL and ADL radios can read/write the Transparent (EOT and EOC) and Packet Switched protocols and all PDL and ADL radios with **Scramble Control** selected will automatically decode the received data.
For security purposes, we recommend leaving the **Scramble Control** field checked at all times. If you select a protocol type other than Transparent (EOT and EOC) and Packet Switched, **Scrambling Control** will automatically be disabled (though the box will remain checked).
However, if some of the radios in your system are non-Pacific Crest radios, you may need to turn **Scramble Control** off.

      iii. Automatic turn off
This allows the radio to turn off automatically when the power level in the battery falls below a user-specific level.

L. Serial Interface Screen
The **Serial Interface** screen allows you to configure the serial interface between the ADL radio and external devices such as a PC running ADL Access, a GPS receiver or

monitoring equipment. The way you set up the ADL radio to talk to your PC is how it will talk to all external devices (unless your ADL radio is a model with a user interface on its front panel that allows radio configuration in the field). So you should first determine which parameters are required for serial communications in the field by the GPS receiver or external equipment and then input these same parameters into ADL Access on the Serial Interface screen.

Serial communications require a serial port consisting of a software driver running in concert with the operating system and a physical port – usually a DB9 connector. If your PC, GPS receiver or other external device does not have a serial port, you may use a serial-to-USB adaptor cable to connect the radio's serial cable to the external device.

a. Port Configuration
   i. Baud Rate
      The default baud rate between the PC and the radio is 38400. You can select other rates between 4800 and 115200 by clicking the down arrow to the right of the **Baud Rate** field.

   ii. Parity
      The serial ports on most PCs do not use any parity bits. But if your PC's COM port requires odd or even number of parity bits, click the down arrow to the right of the **Parity** field and make the necessary selection.

b. Protocol Configuration

   i. Protocol Type
      You must select a protocol, a set of rules governing the order, syntax, etc. of the data communicated between the external device, such as a GPS receiver, and your radio. All radios communicating with one another must be set to use the same protocol.
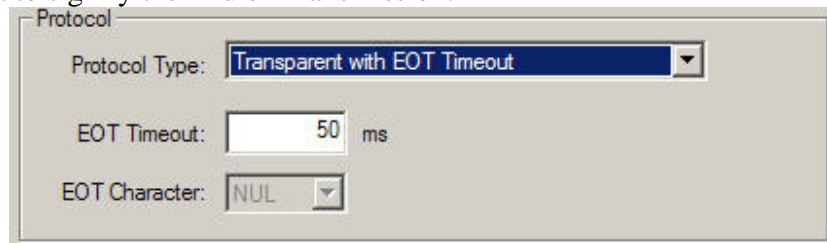   Choose the protocol your radios will use by clicking the down arrow to the right of the **Protocol Type** field. The choices are as follows:
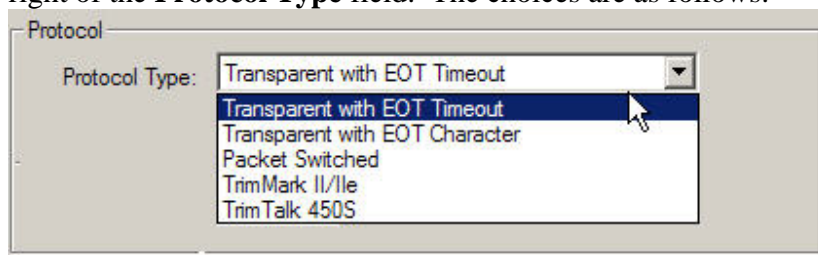
      There are two types of "Transparent" protocols, in which the data have no address or frame characters and are thus "transparent." Radios using transparent protocols, however, must know when the transmission has ended, i.e., the End of Transmission or "EOT." There are two ways to do this:

- With a length of time during which there is no transmission (EOT Timeout)
- With a special character (EOT Character)

For systems using Pacific Crest radio modems exclusively, the default setting is **Transparent with EOT Timeout**. When you select Transparent with EOT Timeout you should input the amount of time in milliseconds you want to signify the End of Transmission:

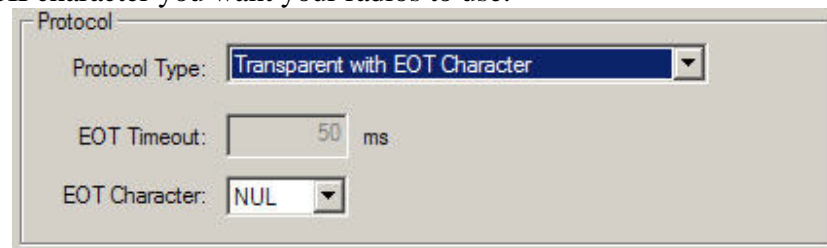The default is 50 milliseconds.

When you select **Transparent with EOT Character**, you should select the ASCII character you want your radios to use:

The default is the "NUL" ASCII character. To select another character click the down arrow to the right of the EOT Character field and click your choice. You can choose among the following characters: NUL, SOU, STX, ETX, EOT, ENQ, ACK, BEL, BS, HT, LF, VT, FF, CR, SO, SI, DLE, DC1, DC2, DC3, DC4, NAK, SYN, ETB, CAN, EM, SUB, ESC, FS, GS, RS, US, SP, !, ", # and $.

Packet Switched protocol is unique in that it is a "command" mode. In all other protocols, incoming serial port data is formatted into packets and transmitted automatically. When **Packet Switched** protocol is selected, external equipment must provide the packet formatting, scrambling, error correction, and housekeeping functions, and send commands to the radio to perform the actual transmission and reception of data. This may be useful in specialized applications where settings (such as channel selection) must be changed "on the fly" and the controlling serial port equipment can be programmed to perform these functions.

TRIMMARK II/IIe is a proprietary protocol used by Trimble TRIMMARK™ radios. ADL radios are fully compatible with TRIMMARK radios, but only when set to TRIMMARK protocol.

TRIMTALK 450S is a proprietary protocol used by Trimble TRIMTALK™ 450S radios. ADL radios are fully compatible with TRIMTALK 450S radios, but only when set to **TRIMTALK 450S** protocol.

Note: If 4FSK modulation is selected on the **Modulation Type** field of the **Radio Link** screen (see above), protocol types that do not support 4FSK (e.g., TRIMMARK AND TRIMTALK protocol) do not appear in the **Protocol Type** field. To select one of these non-4FSK protocols, you must first select GMSK on the **Radio Link** screen.

c. Advanced Serial Interface Configuration
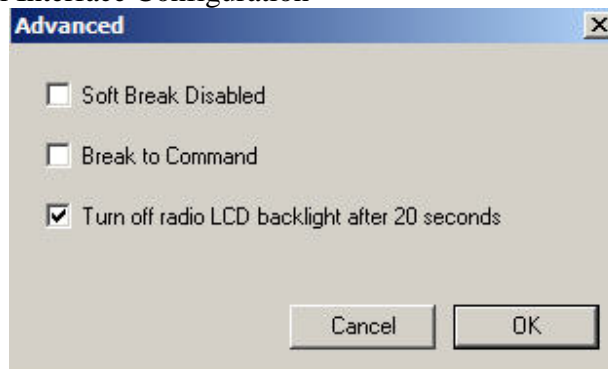
Click the **Serial Interface** screen's **Advanced** button to access the following functions:

i. Soft Break Disabled
ADL Access normally connects to a radio using a technique called **Soft Break** whereby you attach a radio, turn it on and click the **Connect** button. Checking **Soft Break Disabled** allows you to reconnect to the radio without using the **Soft Break** technique. This is normally done to troubleshoot connection problems under the guidance of a service technician.

ii. Break to Command
The **Break to Command** function configures the radio to accept a hard break signal that puts the radio into command mode. When the **Break to Command** is unchecked, any hard break will be ignored.

iii. Turn off radio LCD backlight after 20 seconds
If your ADL radio has an LCD display, it will preserve power by turning off the display in 20 seconds unless you press any button on the radio's front panel. To keep the LCD display turned on, uncheck this function and click the **Advanced** screen's **OK** button.

M. Dealer Screen
Click the **Dealer** tab to display the **Dealer** functionalities:
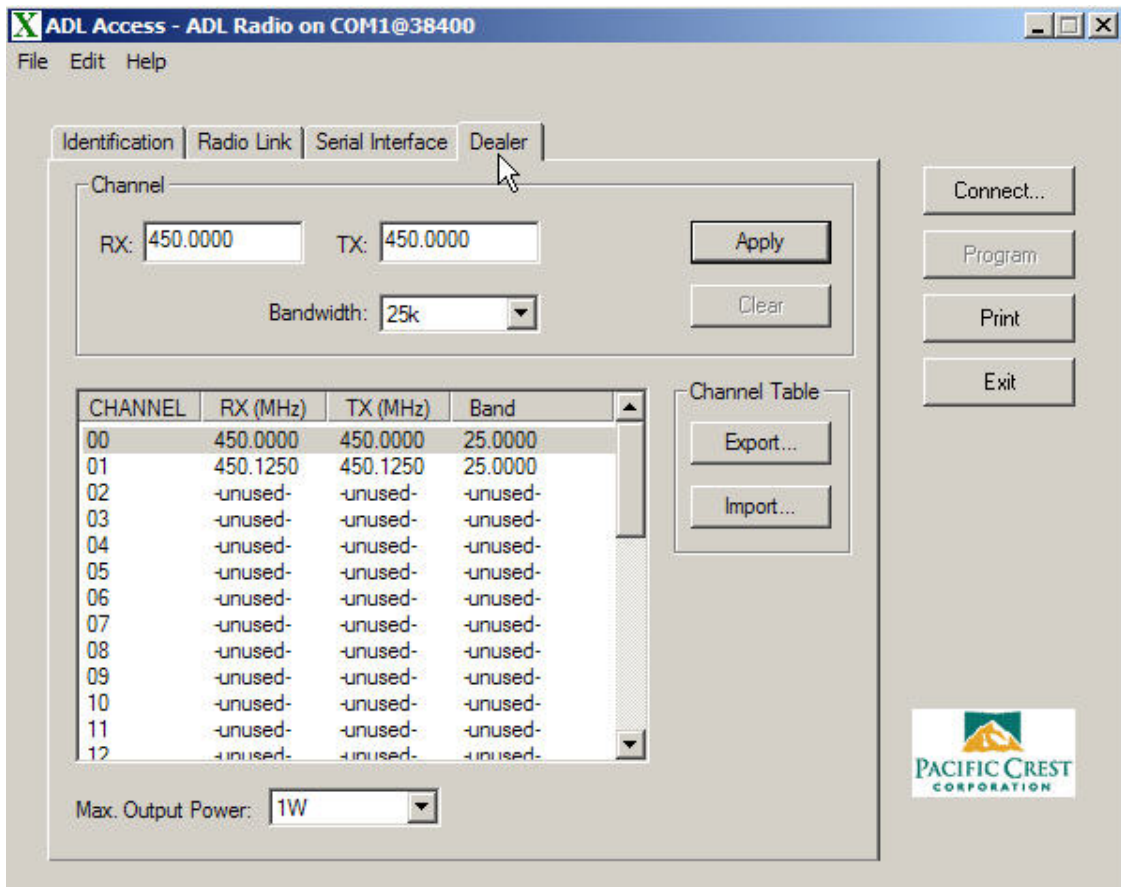
The primary function of the Dealer screen is to manage channel tables. Channel tables are lists of radio parameters comprising a channel number (from 00 to 31), a frequency at which the radio will receive data, a frequency at which the radio will transmit data (which may be different from the receive frequency) and a channel bandwidth. Pacific Crest dealers must use ADL Access to create and upload a channel table into each ADL radio prior to its delivery to an end user. The channel table must match the license granted to each end user by the appropriate governmental agency.

a. Creating a Channel Table
    i. Click anywhere on the first line corresponding to the first channel (Channel 00) on the channel table window
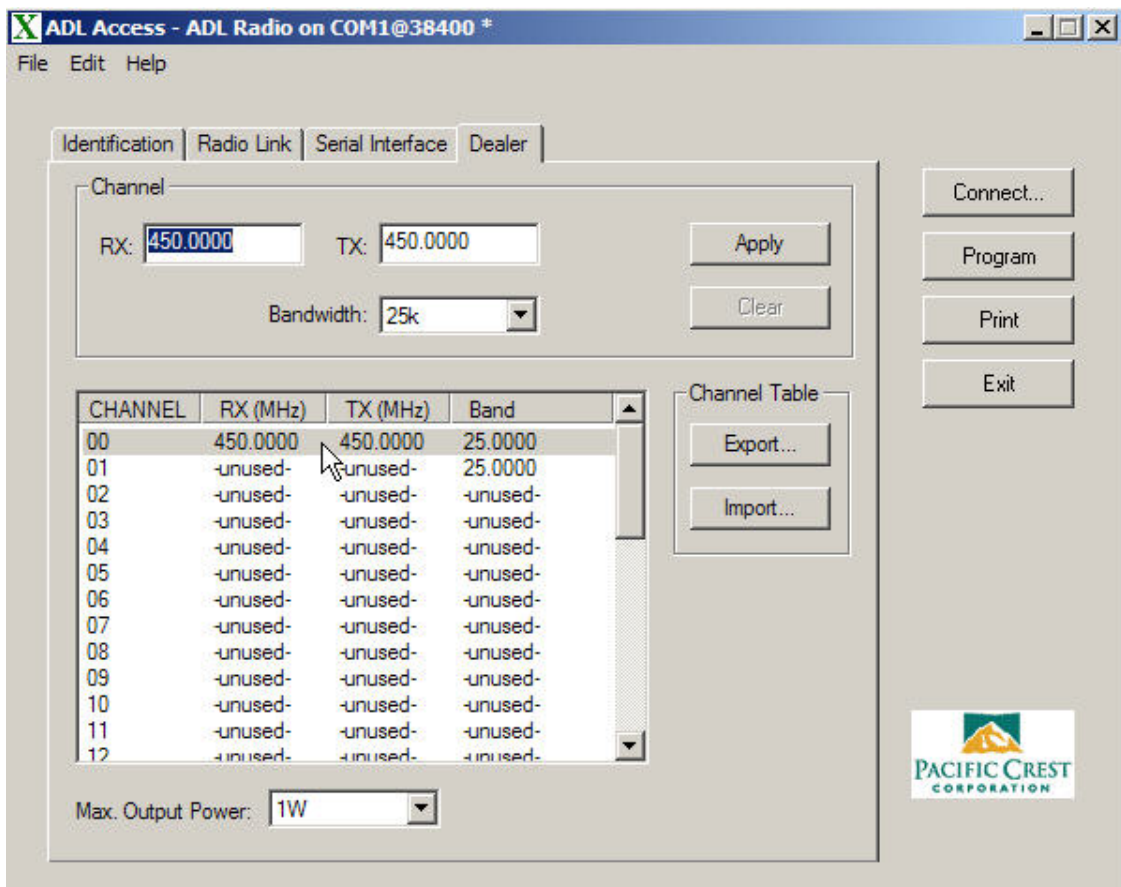
This highlights the default frequency in the **RX:** field.

    ii. Type in the frequency in the **RX:** field on which you want the radio to receive data on the selected channel.

   iii. Type in the frequency in the **TX:** field on which you want the radio to transmit data on the selected channel.

   iv. Click the down arrow to the right of the **Bandwidth** field and select the channel bandwidth for the selected channel
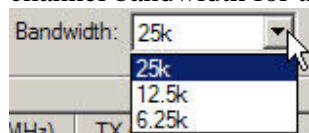
   v. Click the **Apply** button to configure the selected channel
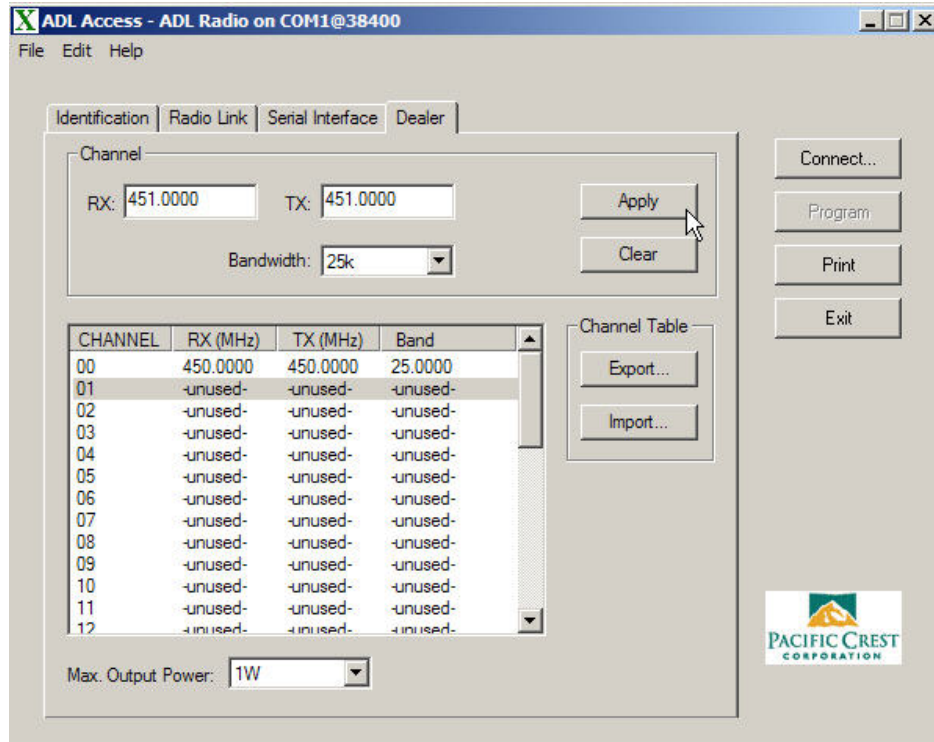
vi. Click the Clear button to delete any channel's configuration and reset the channel to "unused." You can clear any channel except Channel 00.
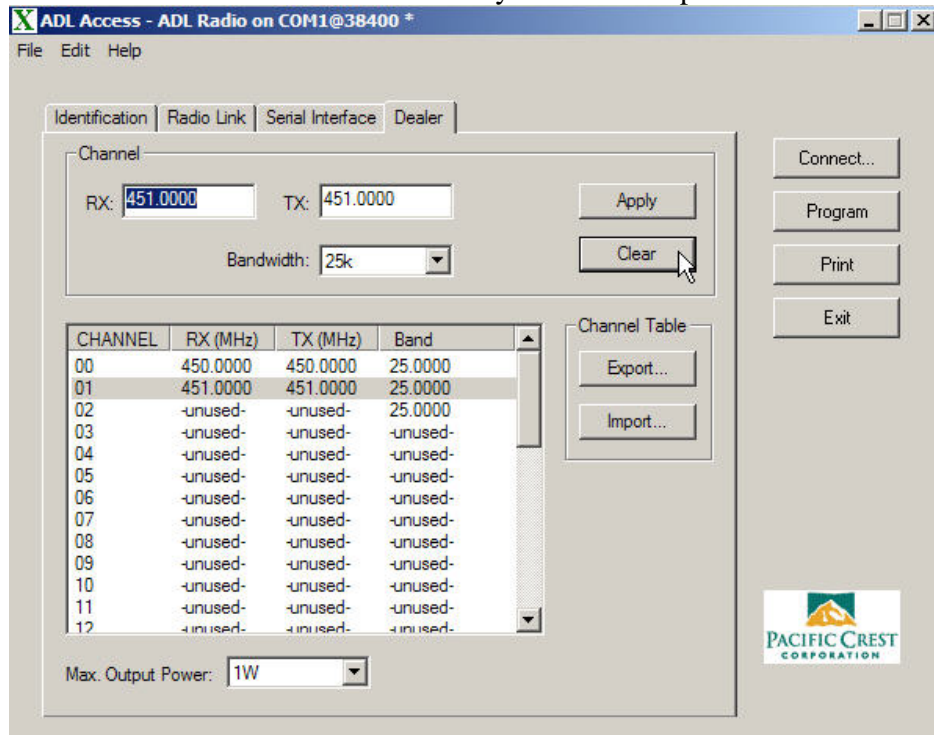
b. Exporting a Channel Table
After you created a channel table, you can save it as a *.frq file to your PC for archiving or uploading into other radios. To export it, click the **Export** button and identify a file name and location for the file.
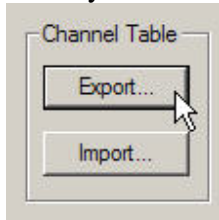

c. Importing a Channel Table
You can configure a radio using an existing channel table created by ADL Access by clicking the Import button and selecting the desired *.frq file.
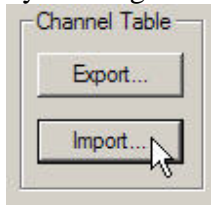
d. Setting Maximum RF Output Power
End users can select various RF power output levels for their ADL transceivers using the **TX Power** field on the **Radio Link** screen. The maximum power level, however, is often established by national governments, and exceeding this power level can be prohibited by law. Depending on local law, it may be the dealer's responsibility to set this maximum power output prior to delivery of the transceiver to the end user. To do this, click the Max Power Output button on the lower left of the Dealer screen:
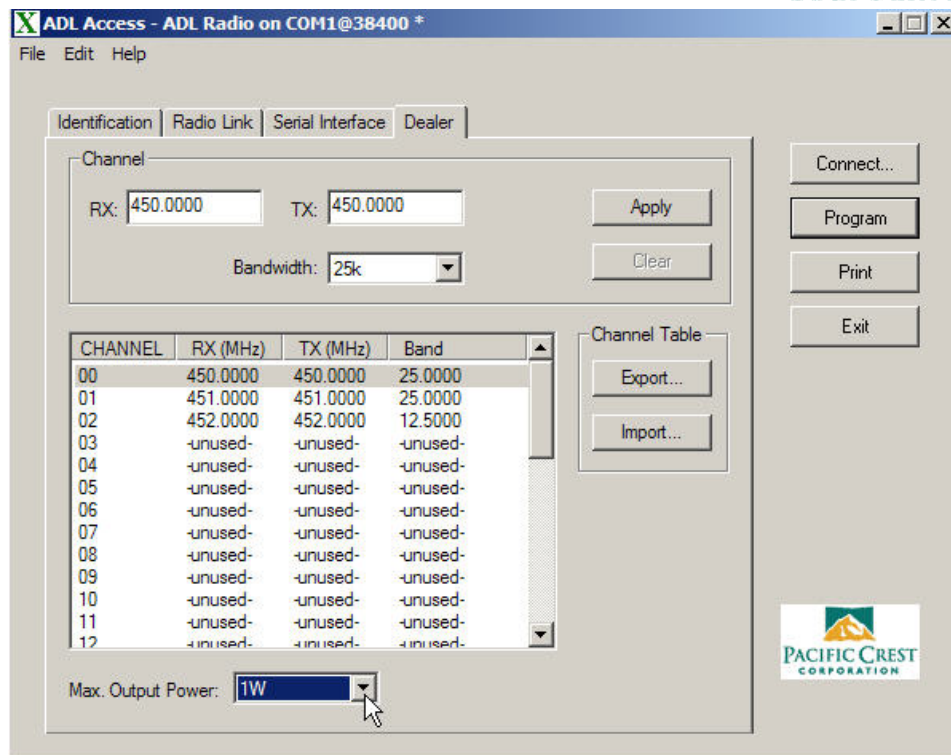
N. Programming the Radio
ADL Access is like most Microsoft Windows programs in that when you launch the program, it displays a blank file. Clicking the **Connect** button not only connects ADL Access to the radio but also opens a file in the PC's RAM memory containing the radio's parameters. If you edit any parameters, the changes are made only to the version of the parameter file in your PC's RAM. As when you open a document or spread sheet with Microsoft Word or Excel, the file is copied to RAM and you make the edits to this RAM copy. An asterisk appears in the ADL Access title bar if the displayed configuration parameters are changed. To save any parameter changes to the radio click the **Program** button on the right-hand side of the screen. To save any changes to an ADL Access file to your hard drive, click **File > Export** (see above).

O. Printing Radio Configuration Parameters
To create and print a file describing the current configuration of the attached radio, click the **Print** button on the right of the main ADL Access window:
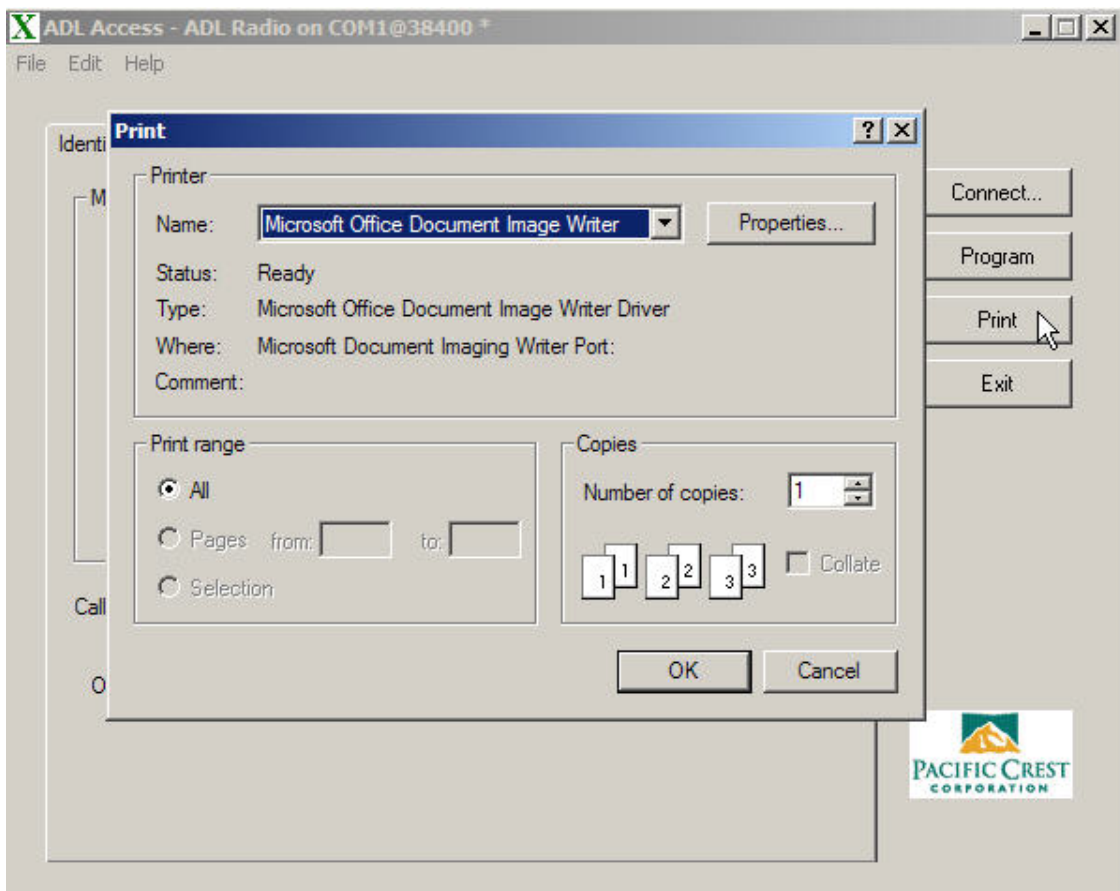
On the subsequent **Print** screen, select the printer you wish to use and click **OK**. This action prints the current configuration of the attached radio.

Note: *The configuration displayed on ADL Access may not be the same as the attached radio's configuration.* ADL Access displays a radio's configuration as soon as you connect to the radio. But you can import a configuration file from your PC by clicking **File > Import**. You can also use ADL Access to edit parts of the displayed configuration. The imported or edited configuration displayed on ADL Access is not written to the radio until you click the **Program** button. If you click **Print** before clicking **Program**, the configuration that is printed will be that of the radio and not what is displayed on ADL Access.

An asterisk in the ADL Access title bar indicates that the displayed configuration has been changed.
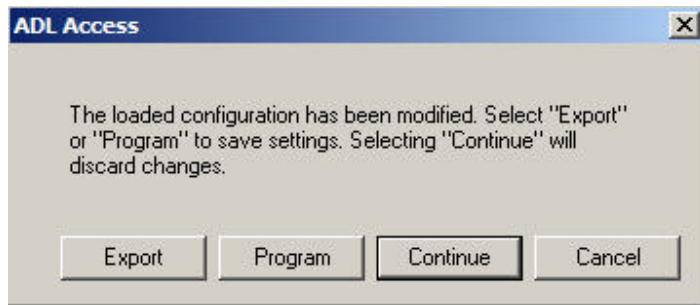

P. Exiting ADL Access

There are three ways to exit ADL Access:
- Clicking the **Exit** button on the right of the main screen
- Clicking the **X** at the top right corner

- Clicking **File > Exit**

When you exit ADL Access after changing any setting without programming the change(s) to a radio, you see the following message:

Clicking **Export** writes a configuration file to a user-selectable location on your PC and exits ADL Access.
Clicking **Program** writes the new configuration to the attached radio and exits ADL Access.
Clicking **Continue** discards the changes and exits ADL Access.
Clicking **Cancel** returns you to ADL Access without programming any changes to the radio.

Remember that editing any parameters in ADL Access is like changing a Microsoft Office file: the changes are made to a copy of the file in your PC's RAM. You must save these changes before exiting the program or you will lose them. You save the changes *to a file on your PC* by exiting ADL Access and selecting the **Export** option or by clicking **File > Export**. You save the changes *to a connected radio* by exiting ADL Access and selecting the **Program** option or by clicking the **Program** button on the right of the main screen.

Q. Contact information
    a. Customer Support
        i. Technical Support
        ii. Repair info: RMA website
    b. Sales contact info

R. Index

S. Back Cover (with manual's P/N)