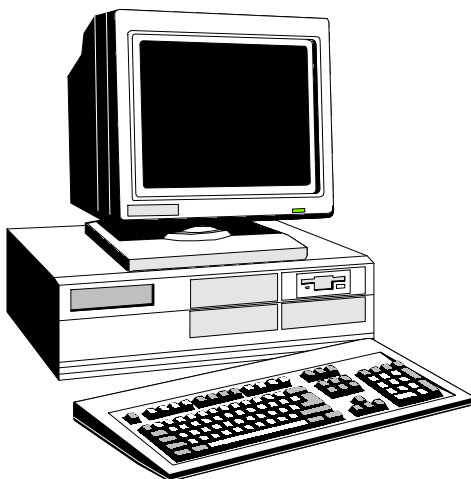
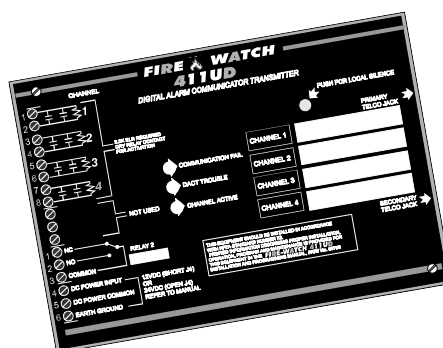


P K-411UD

Windows®-Based Off-Line Programming Utility Software Manual



For the Fire•Watch 411UD and 411UDAC Digital Alarm Communicator Transmitters

Windows is a Registered Trademark of Microsoft Corporation.

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Installation Precautions

Adherence to the following will aid in problem-free installation with long-term reliability:

WARNING - Several different sources of power can be connected to the fire alarm control panel. Disconnect all sources of power before servicing. Control unit and associated equipment may be damaged by removing and/or inserting cards, modules or interconnecting cables while the unit is energized. Do not attempt to install, service or operate this unit until this manual is read and understood.

CAUTION - *System Reacceptance Test after Software Changes:* To ensure proper system operation, this product must be tested in accordance with NFPA 72 Chapter 7 after any programming operation or change in site-specific software. Reacceptance testing is required after any change, addition or deletion of system components or after any modification, repair or adjustment to system hardware or wiring.

All components, circuits, system operations or software functions known to be affected by a change must be 100% tested. In addition, to ensure that other operations are not inadvertently affected, at least 10% of initiating devices that are not directly affected by the change, up to a maximum of 50 devices, must be tested and proper system operation verified.

This system meets NFPA requirements for operation at 0 - 49° C and at a relative humidity of 85% RH (noncondensing) @ 30° C. However, the useful life of the system's standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and its peripherals be installed in an environment with a nominal room temperature of 60 - 80° F.

Verify that wire sizes are adequate for all initiating and indicating device loops. Most devices cannot tolerate more than a 10% I.R. drop from the specified device voltage.

Like all solid state electronic devices, this system may operate erratically or can be damaged when subjected to lightning induced transients. Although no system is completely immune from lightning transients and interferences, proper grounding will reduce susceptibility. *Overhead or outside aerial wiring is not recommended, due to an increased susceptibility to nearby lightning strikes.* Consult with the Technical Services Department if any problems are anticipated or encountered.

Disconnect AC power and batteries prior to removing or inserting circuit boards. Failure to do so can damage circuits.

Remove all electronic assemblies prior to any drilling, filing, reaming or punching of the enclosure. When possible, make all cable entries from the sides or rear. Before making modifications, verify that they will not interfere with battery, transformer and printed circuit board location.

Do not tighten screw terminals more than 9 in-lbs. Over tightening may damage threads, resulting in reduced terminal contact pressure and difficulty with screw terminal removal.

This system contains static-sensitive components. Always ground yourself with a proper wrist strap before handling any circuits so that static charges are removed from the body. Use static suppressive packaging to protect electronic assemblies removed from the unit.

Follow the instructions in the installation, operating and programming manuals. These instructions must be followed to avoid damage to the control panel and associated equipment. FACP operation and reliability depend upon proper installation.

Fire Alarm System Limitations

While installing a fire alarm system may make lower insurance rates possible, it is not a substitute for fire insurance

An automatic fire alarm system - typically made up of smoke detectors, heat detectors, manual pull stations, audible warning devices and a fire alarm control with remote notification capability, can provide early warning of a developing fire. Such a system, however, does not assure protection against property damage or loss of life resulting from a fire.

Any fire alarm system may fail for a variety of reasons:

Smoke detectors may not sense fire where smoke cannot reach the detectors such as in chimneys, in walls, in roofs, or on the other side of closed doors. Smoke detectors also may not sense a fire on another level or floor of a building. A second floor detector, for example, may not sense a first floor or basement fire. Furthermore, all types of smoke detectors, both ionization and photoelectric types, have sensing limitations. No type of smoke detector can sense every kind of fire caused by carelessness and safety hazards like smoking in bed, violent explosions, escaping gas, improper storage of flammable materials, overloaded electrical circuits, children playing with matches or arson.

IMPORTANT! *Smoke detectors must be installed in the same room as the control panel and in rooms used by the system for the connection of alarm transmission wiring, communications, signaling and/or power.* If detectors are not so located, a developing fire may damage the alarm system, crippling its ability to report a fire.

Audible warning devices such as bells may not alert people if these devices are located on the other side of closed or partly open doors or are located on another floor of a building.

A fire alarm system will not operate without any electrical power. If AC power fails, the system will operate from standby batteries only for a specified time.

Rate-of-Rise heat detectors may be subject to reduced sensitivity over time. For this reason, the rate-of-rise feature of each detector should be tested at least once per year by a qualified fire protection specialist.

Equipment used in the system may not be technically compatible with the control panel. It is essential to use only equipment listed for service with your control panel.

Telephone lines needed to transmit alarm signals from a premise to a central monitoring station may be out of service or temporarily disabled.

The most common cause of fire alarm malfunctions, however, is inadequate maintenance. All devices and system wiring should be tested and maintained by professional fire alarm installers following written procedures supplied with each device. System inspection and testing should be scheduled monthly or as required by National and/or local fire codes. Adequate written records of all inspections should be kept

Table of Contents

CHAPTER 1: Product Description	6
1.1: Main Features	6
CHAPTER 2: Getting Started	8
2.1: Basic System Requirements	9
2.1.1: System Microprocessor	9
2.1.2: Memory and Drive Requirements	9
2.1.3: Monitor	9
2.1.4: Mouse	9
2.1.5: Microsoft® Windows® Environment	9
2.2: About Modems	10
2.2.1: Compatible Modems	10
2.3: Cable Connections	11
2.4: Inventory	11
FIGURE 2-1: Windows® 3.1 Dialog Box	11
2.5: Loading Software	11
2.5.1: Using Windows® To Load PK-411UD	11
FIGURE 2-2: Windows® 95 Start	11
FIGURE 2-3: Windows® 95 Dialog Box	12
2.5.2: PK-411UD Installation Prompts	12
FIGURE 2-4: Installation to Hard Drive	12
FIGURE 2-5: Installation Path	12
FIGURE 2-6: Installation Completed	13
2.6: Program Files	13
CHAPTER 3: User Interface	14
FIGURE 3-1: PK-411UD ICON	14
FIGURE 3-2: Copyright Window	14
3.1: Initial Use of PK-411UD	14
FIGURE 3-3: Initialization Window	14
3.1.1: Log-in as Master	15
FIGURE 3-4: Log-in	15
FIGURE 3-5: Communicator Selection Window	15
CHAPTER 4: Setup	16
4.1: Operator	16
FIGURE 4-1: Main Menu - Operator Setup	16
FIGURE 4-2: Operator Information	17
FIGURE 4-3: New Access	18
4.2: Default Directory and File	18
FIGURE 4-4: Main Menu - Configure Directories and Files	18
FIGURE 4-5: Default Selections	19
4.2.1: Default Directory	19
FIGURE 4-6: Path Locator	19
4.2.2: Install Directory	19
4.2.3: User Default Files	20
FIGURE 4-7: User Default Files	20
4.3: Modem	21
FIGURE 4-8: Main Menu - Configure Modem	21
FIGURE 4-9: Configure Modem	21
4.3.1: Modem	22
FIGURE 4-10: Modem Selection	22
4.3.2: Initialization String	22

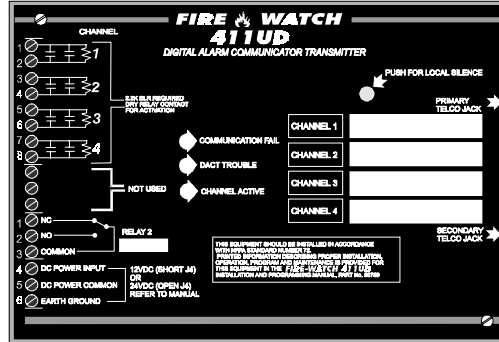
FIGURE 4-11: Initialization String.....	22
4.3.3: Hangup String	23
4.3.4: Communication Port	23
FIGURE 4-12: No Modem Found Window.....	23
4.3.5: Modem Initialization and Testing.....	23
4.3.6: Saving Modem Settings.....	23
CHAPTER 5: Data Entry.....	24
FIGURE 5-1: Main Menu	24
5.1: Customer.....	25
FIGURE 5-2: Customer Files.....	25
5.1.1: Adding Customer to Database.....	25
FIGURE 5-3: Add Customer Button.....	25
FIGURE 5-4: Customer Entry window.....	26
5.1.2: Add Customer Site Information to Database	27
FIGURE 5-5: Customer Site Information	27
5.1.3: Add Program File to Database	27
FIGURE 5-6: Filename	27
FIGURE 5-7: Existing File Selection	28
FIGURE 5-8: New File	28
FIGURE 5-9: Customer Files Window - Central Station	29
5.1.4: Print Options	29
FIGURE 5-10: Printing Options Window - Print All	29
FIGURE 5-11: Print Current.....	30
FIGURE 5-12: Print Text.....	30
5.1.5: Customizing Program Files.....	31
FIGURE 5-13: Central Station Programming.....	31
FIGURE 5-14: Communications Format.....	32
FIGURE 5-15: Test Time Interval	32
FIGURE 5-16: Backup Reporting.....	33
FIGURE 5-17: Communicator Disable /Trouble Call Limit Options.....	33
FIGURE 5-18: 411UD Customer Files Window	33
FIGURE 5-19: 411UD Input/Output Window.....	34
FIGURE 5-20: 411UD Input Function Selection.....	34
FIGURE 5-21: 411UD Output Relay Programming.....	35
FIGURE 5-22: 411UD Option Programming.....	35
FIGURE 5-23: 411UDAC Customer Files Window	36
FIGURE 5-24: Input/Output Window for the 411UDAC.....	36
FIGURE 5-25: 411UDAC Channel 1 - Input/output Window	37
FIGURE 5-26: 411UDAC Output Relay Options	37
FIGURE 5-27: AC Loss Delay Timer Options for the 411UDAC.....	38
FIGURE 5-28: 411UDAC Auto Silence Options	38
FIGURE 5-29: 411UDAC NAC Coding	39
FIGURE 5-30: 411UDAC Restoral Method Option.....	39
FIGURE 5-31: Customer Files Window - Event Codes	40
FIGURE 5-32: Event Code Programming	40
FIGURE 5-33: Customer Files Window - Service Terminal.....	41
FIGURE 5-34: Service Terminal Programming	41
5.1.6: Automatic Download List	43
FIGURE 5-35: Automatic Download	43
FIGURE 5-36: Main Menu - Automatic Download	44
5.2: Modified Fields.....	44
FIGURE 5-37: 411UD Modified Fields	44
FIGURE 5-38: 411UDAC Modified Fields	45

CHAPTER 6: Communications	46
6.1: Download to Communicator	46
FIGURE 6-1: Downloading	46
FIGURE 6-2: Download Connection Status.....	46
6.1.1: Download with Callback Enabled.....	47
6.1.2: Download with Callback Disabled.....	47
6.2: Upload from Communicator	48
FIGURE 6-3: Uploading.....	48
FIGURE 6-4: Upload Connection Status.....	48
FIGURE 6-5: Upload Filename	49
6.2.1: Converting an Upload File to a Download File	49
FIGURE 6-6: Customer Window - Recall File.....	49
FIGURE 6-7: Customer Site Information.....	50
FIGURE 6-8: Filename Selection	50
FIGURE 6-9: Current Information Selection.....	51
FIGURE 6-10: Customer Window - Recall File.....	51
6.3: Communicator Time.....	52
FIGURE 6-11: Communicator Time	52
6.4: Troubleshoot.....	52
FIGURE 6-12: Troubleshoot Window for the 411UD	52
FIGURE 6-13: Troubleshoot Window for the 411UDAC.....	53
6.5: Automatic Download	53
FIGURE 6-14: Automatic Download Window for the 411UD	54
FIGURE 6-15: Automatic Download Window for the 411UDAC.....	54
FIGURE 6-16: View Log.....	55
 CHAPTER 7: Secret Code.....	 56
FIGURE 7-1: Secret Code	56
 CHAPTER 8: Utilities - Compare	 57
FIGURE 8-1: Compare	57
FIGURE 8-2: Compare File Selections	58
FIGURE 8-3: View Comparison.....	58
8.1: Quick View of Differences.....	59
FIGURE 8-4: Quick View Compare.....	59
8.2: Detailed View of Differences	60
FIGURE 8-5: Detailed View of Compare.....	60
 CHAPTER 9: Security Features.....	 61
9.1: Secret Code	61
FIGURE 9-1: Secret Code	61
FIGURE 9-2: Downloading Secret Code.....	61
9.2: Panel Callback.....	62
9.3: Digital Communicator Time-out	62
9.4: Error Checking	63
9.5: Central Station Acknowledge.....	63
9.6: Password Protection	63

CHAPTER 1 *Product Description*

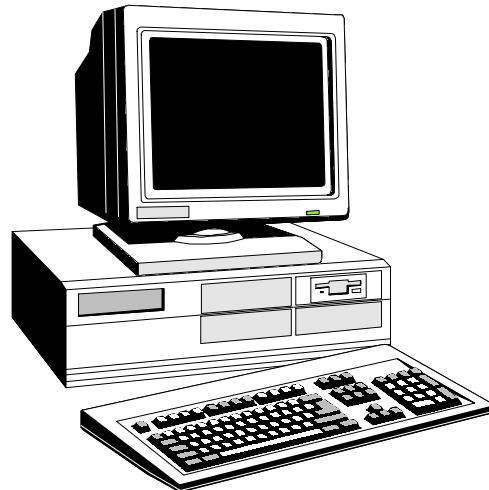
The PK-411UD Off-Line Programming Utility is a versatile utility program which allows remote programming and communicator interrogation of the Fire•Watch 411UD/411UDAC over standard public telephone lines. Using this utility, the communicator can be programmed via modem using most IBM AT or compatible computers, including laptops, equipped with a Hayes® compatible modem. Program files can be created and stored on the PC and then downloaded to the communicator.

Use of the PK-411UD software requires a full understanding of the 411UD/411UDAC Digital Communicator functionality prior to any upload or download activity. For information on the digital communicator, refer to the Fire•Watch 411UD, manual P/N: 50759, or Fire•Watch 411UDAC, manual P/N: 51073. Each time a new program is created or an existing program is modified and entered into a 411UD/411UDAC Digital Communicator, the communicator must be thoroughly tested.



1.1 Main Features

- Program runs under Microsoft® Windows® 3.1 or higher, including Windows® 95
- Password protection with four separate authority levels
- Modem option selection window
- Operator Identification Utility provides operator information which is stored in a database
- Customer File Utility allows customer configuration using separate data files for each customer
- Download file utility (Download to Communicator) permits versatile program setup for programming digital communicators. Create and customize a master default download program or edit existing programs



Main Features

- Upload file utility (Upload from Communicator) permits versatile examination of retrieved communicator programs and information:
 - ✓ Panel program
 - ✓ Troubleshoot data and voltages
 - ✓ Current communicator time
- Security Features:
 - ✓ Secret Code
 - ✓ Time-out at communicator
 - ✓ Callback (with Disable option)
 - ✓ Panel Identification Number
 - ✓ Error checking (with retry on error)
 - ✓ Central Station acknowledge
- File Compare utility allows location by location comparison of separate upload and download files
- Print utility allows printing of upload and download file information
- On-line Help feature
- Escape (Esc) key feature which allows the recall of the last saved item in a program field

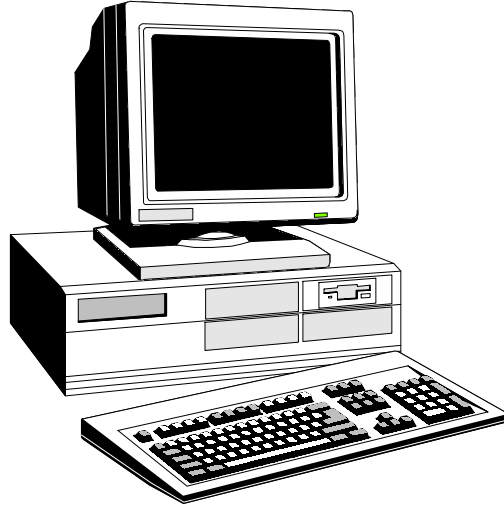
CHAPTER 2 *Getting Started*

The PK-411UD software provides a convenient and powerful tool which can be used to program and manipulate the 411UD/411UDAC programming data from a PC or laptop. This user friendly utility has been designed to provide many features which will enhance the communicator's programmability. In order to take full advantage of the available features, it is important to become familiar with the PK-411UD functions and the environment in which the program was designed to operate. This chapter provides information on the minimum system requirements for the computer in which the PK-411UD will be installed.

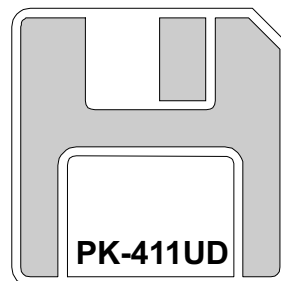
Some computer literacy and a rudimentary understanding of DOS and Windows® are necessary to successfully use this utility. Even if exposure to computers is limited, the information in this chapter along with DOS and Windows® reference material should provide sufficient knowledge to use the PK-411UD program. Take the time to read and understand the installation as presented in this chapter.

An **On-line Help** feature has been incorporated into the software. For information about a window option, use the mouse arrow to point to the window option button or text block. Click and hold the mouse button, and move the arrow off the selected window button or block. Release the mouse button and then press the F1 keyboard key to display the Help window for the selected option.

The keyboard **Escape (Esc)** key can be used to recall the last saved item in a program field. This can be particularly useful if, while typing an entry into a program field, the programmer decides to delete the new entry before saving it. Pressing the **Escape (Esc)** key will cause the last saved entry to be displayed in the program field in place of the recently typed but not saved entry.



**WINDOWS® 3.1
(Or Higher)
Or WINDOWS® 95**



2.1 Basic System Requirements

The PK-411UD Program has been designed for a specific computer environment. Although most IBM AT or compatible computers will accommodate the PK-411UD software, specific computer requirements and operating systems must be adhered to. In order to ensure proper operation of the PK-411UD software, the minimum requirements listed below must be met.



2.1.1 System Microprocessor

Most IBM AT or compatible computers with at least a 486-66MHz microprocessor may serve as a service terminal and will accommodate the PK-411UD software.



2.1.2 Memory and Drive Requirements

The service terminal must have a minimum of 4 megabytes of onboard RAM in order to run the PK-411UD software. The program must be run from a hard drive and requires a minimum of 4 megabytes of hard drive space to store the program.



2.1.3 Monitor

A minimum of a VGA monitor is required for adequate display of the PK-411UD menu screens.



2.1.4 Mouse

Any IBM compatible mouse or track ball should be used to run the program. The program may also be run from a standard 101-key keyboard, although certain features will not be accessible.



2.1.5 Microsoft® Windows® Environment

The PK-411UD software was developed to run in a Windows® environment. Microsoft® Windows® version 3.1 or higher or Windows® 95 must be installed.

To take full advantage of the Windows®-based software, a basic understanding of Windows® is needed and may be acquired from the many excellent books and manuals on Microsoft® Windows®. It is not the intention of this manual to provide this training, however, some of the terms used in reference to Windows® are indicated in this section.

2.2 About Modems

A modem (**mod**ulator/**dem**odulator) converts the digital data signals of a computer to audio tones in order to transmit the serial data over standard telephone lines. The modem also converts the incoming audio tones to digital data that the computer can use.

Two basic types of modem have been designed for IBM PCs and compatibles:

- direct connect internal modems
- direct connect external modems

The internal modem is designed as an IBM PC compatible expansion card which plugs into the computer's expansion slot. The main advantage of the internal modem is the relatively low cost.

An external modem incorporates its own power supply and RS-232 interface into a single package. It connects to an IBM compatible computer through an RS-232 serial cable. The main advantages of the external modem are the simplicity of connection to an IBM compatible computer with an RS-232 serial interface and the ease with which it can be moved from one computer to another.

Using the Configure Modem window, the PK-411UD can be set to operate with either an internal or external modem with a baud rate of 1200 or higher. The PK-411UD will set it to the proper baud rate. Baud rate refers to the speed of transmission in bits per second. Most 1200 baud modems conform to Bell 212A North American standard. Baud rate standards set guidelines for modem manufacturers to ensure compatibility between modems operating at the same baud rates.

2.2.1 Compatible Modems

The following internal and external modems are supported:

- Cardinal 14400
- Cardinal 28800
- Hayes Accura 14400
- Hayes Accura 28800
- Hayes Optima 9600
- Hayes 2400 Data/9600 FAX
- Hayes 1200 Smart Modem
- Identity ID-2400
- US Robotics Sportster 1200
- US Robotics Sportster 9600
- US Robotics Sportster 14400
- US Robotics Sportster 28800
- Zoom 14400 Data/FAX
- Zoom 9600

2.3 Cable Connections

Direct connect modems are connected to telephone lines using standard RJ11 modular jacks and plugs.

Internal modems, which plug into the PC computer's expansion slot, connect directly to the phone line using the RJ11 connectors. An RJ11 jack is built into the modem card allowing connection to the phone line. Power for the modem is supplied by the computer.

External modems connect to the telephone line using the RJ11 jack and plug. The modem then connects to the PC's RS-232 serial port. A DB-9 or DB-25 RS-232 cable is used, depending on the computer serial port connector. Power must be supplied to the external modem.

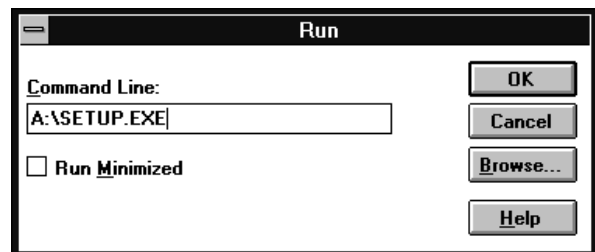
Note that cables are not supplied with the PK-411UD.

2.4 Inventory

The PK-411UD Off-Line Programming Utility Kit (P/N PK-411UD) contains the following:

- Four 3½" floppy disks
- PK-411UD Instruction Manual P/N 50802

FIGURE 2-1: Windows® 3.1 Dialog Box



2.5 Loading Software

The PK-411UD software, which is supplied on four 3½" floppy disks, must be loaded onto the hard drive of the computer to be used for uploading and downloading to the 411UD/411UDAC Digital Communicator. The software should be loaded using Windows®.

2.5.1 Using Windows® To Load PK-411UD

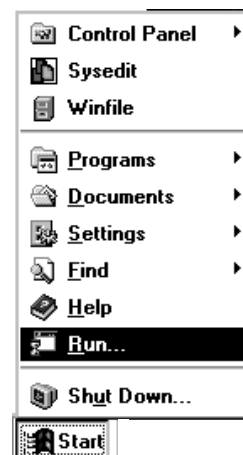
With Windows® 3.1 or higher installed and the Program Manager being displayed, insert the PK-411UD floppy disk labeled 'Disk 1 of 4' into the computer floppy drive. Using the mouse pointer, click 'File' in the Program Manager menu line. Using the mouse, click 'Run' to select it from the list of options under 'File'. The window shown in Figure 2-1 will be displayed with a cursor blinking in a box labeled 'Command Line'.

With Windows® 95 installed, use the mouse pointer to click the 'Start' button. The window shown in Figure 2-2 will be displayed. Using the mouse pointer, click 'Run' to display the dialog box shown in Figure 2-3. The cursor will be blinking in the box labeled 'Open'.

For Windows® 3.1 or higher and Windows® 95, type the following in the Command Line or Open Line:

A:\SETUP.EXE

FIGURE 2-2: Windows® 95 Start



If a floppy drive other than A is used, replace A with the floppy drive in which the PK-411UD floppy disk is inserted. Click the OK button in this window. The computer will begin loading the software from the floppy disk to the hard drive. Window prompts will appear, instructing when to insert the remaining disks. The software will also provide prompts as indicated in “PK-411UD Installation Prompts” on page 12.

2.5.2 PK-411UD Installation Prompts

One of the first screens to be displayed during the installation process is shown in Figure 2-4. This window recommends closing any application programs which may be running, before continuing with the PK-411UD installation. After closing all applications, click the OK button.

The window displayed in Figure 2-5 indicates the default path for loading the software to the hard drive. As shown in the prompt, the program will be loaded on the C drive in a directory called PK411UD when the button (see Figure 2-5 arrow) is clicked. If you wish to change this default path, type in the new information after clicking the 'Change Directory' button.

For example, if you have a partitioned hard drive containing a D drive, you may load the program to the D drive partition. If you wish to call the directory something other than PK411UD, type a different name such as PROGRAM (limit is 11 characters). To use more than 8 characters, a period followed by up to 3 characters may be entered, such as PROGRAM.DIR. To designate PROGRAM as the directory name, type the following:

D:\PROGRAM

Click the Install button (indicated by the arrow in Figure 2-5) to continue the installation. Note that the last floppy disk, labeled 'Disk 4 of 4', should remain in the disk drive until installation is completed.

FIGURE 2-3:Windows® 95 Dialog Box

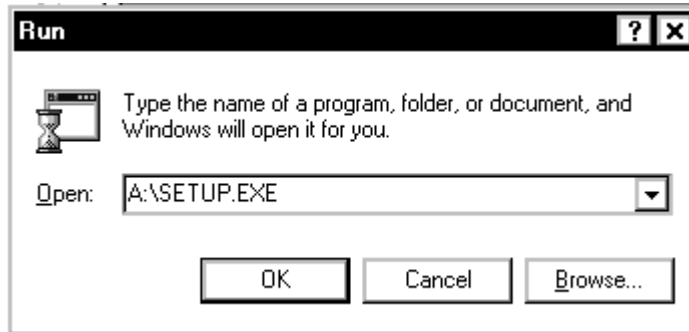


FIGURE 2-4:Installation to Hard Drive

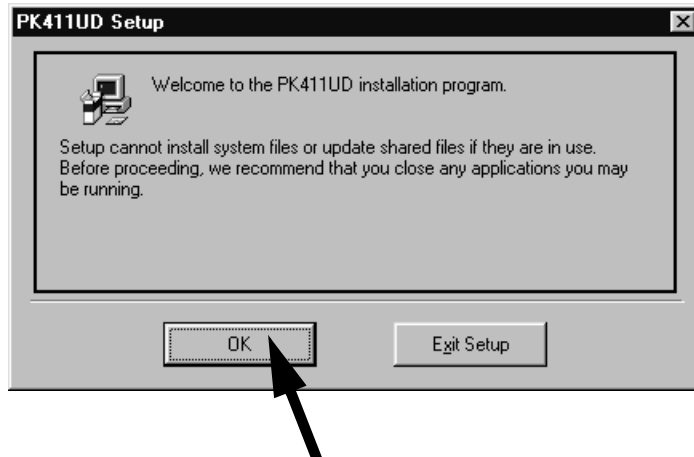
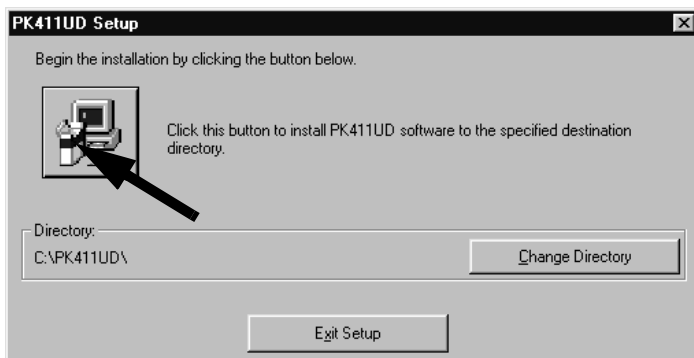


FIGURE 2-5:Installation Path



The last installation window, as shown in Figure 2-6, provides an indication that the installation is completed. Use the mouse arrow to click the OK button in this window. The final installation process is the creation of the Upload/Download program ICON.

2.6 Program Files

The PK-411UD Off-Line Programming Utility can be used in two ways:

- Off-line - program files can be created or modified for later use
- On-line - the PC is connected to the 411UD/411UDAC via modem and program files can be transferred between the two devices.

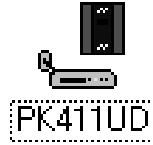
FIGURE 2-6:Installation Completed



CHAPTER 3 *User Interface*

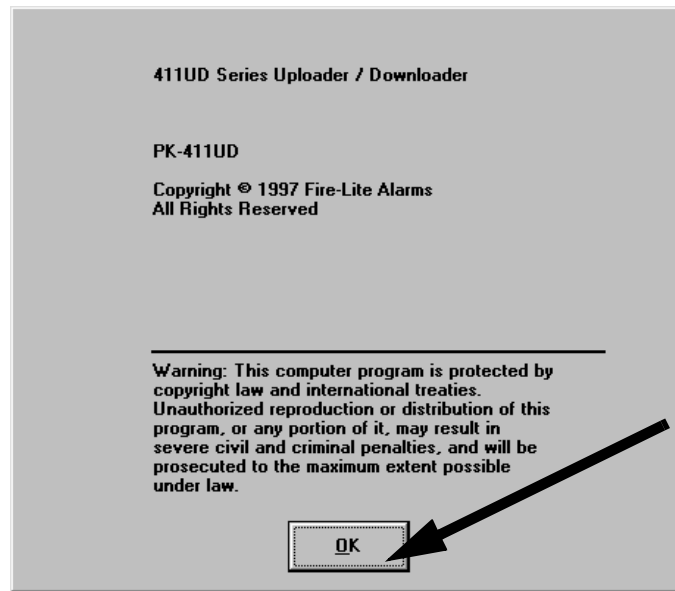
Following the completion of the PK-411UD program installation, a window is created with the PK-411UD ICON as shown in Figure 3-1. Run the Upload/Download program by placing the mouse pointer on the ICON and double clicking.

FIGURE 3-1:PK-411UD ICON



The Copyright window, the first window displayed when the PK-411UD program is run, is shown in Figure 3-2. Read the information displayed before proceeding with the PK-411UD Upload/Download program. Clicking the OK button indicates agreement and compliance with this statement.

FIGURE 3-2:Copyright Window



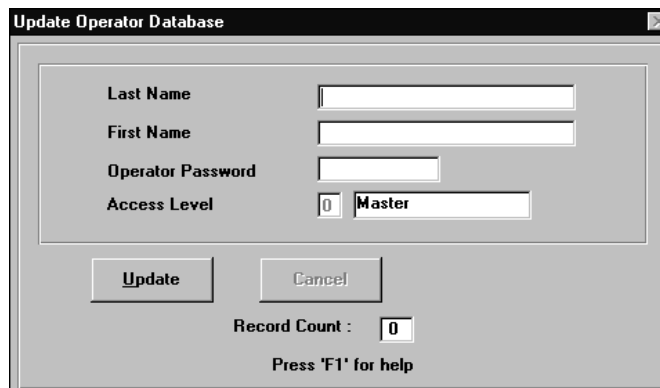
Note that from this point on, all subsequent menus can be accessed and functions performed using the keyboard. This is especially useful when a mouse is not available. Move between buttons or fields via the 'Tab' key, followed by pressing the 'Enter' key.

Note that all of the windows which appear while the PK-411UD software is being used can be centered on the PC (service terminal) screen by pressing and holding the Control (Ctrl) key while pressing the 'C' key on the keyboard.

3.1 Initial Use of PK-411UD

The window shown in Figure 3-3 will appear only on initial use of the PK-411UD Upload/Download program. The primary (master) program operator is assigned at this time. The flashing cursor will be in the top box labeled Last Name. The primary or master operator types in the last name and then places the mouse cursor in the First Name box and clicks. The cursor moves to the next field labeled First Name where the operator types the first name. The mouse cursor is placed in the Operator Password box and clicked. The cursor now moves to the Operator Password field. A user defined password consisting of at least 1 but not more than 8 alphanumeric characters is typed in. The name and password should be checked and confirmed for accuracy. If satisfied with this data, position the mouse pointer on the Update key and click to store this information. The software is now registered to the individual entering this data. This window will not appear on subsequent start-ups of the PK-411UD program.

FIGURE 3-3:Initialization Window



3.1.1 Log-in as Master

Following the Initialization window shown in Figure 3-3, or each time the Upload/Download program is run after initialization, the window shown in Figure 3-4 will appear. The operator must type in the Last Name, the First Name and the previously assigned password. Movement from one entry field to the next is accomplished by pressing the Enter key, the Tab key or by using the mouse arrow to click the next field. Once the Password is keyed-in, click the **OK** button or press the Enter key twice.

It should be noted that for security reasons, the password is not displayed as it is typed (asterisks appear instead). Make certain the password is typed correctly since there is no visual confirmation. Any incorrect entries during Log-in will result in a message window stating 'Error With Log-in'.

FIGURE 3-4:Log-in



Following a successful Log-in, the window shown in Fig. 3-5 will be displayed.

FIGURE 3-5:Communicator Selection Window



After selecting the type of Communicator, the Main Menu window shown in Figure 4-1 will be displayed. The menu options are grouped under the headings of **Data Entry**, **Utilities**, **Communications**, **Setup** and **Secret Code**. *Each menu option is described in the sequence in which it would normally be used for an initial 411UD/411UDAC Digital Communicator upload or download.*

CHAPTER 4 *Setup*

The Setup options include:

- ✓ **Operator** setup, which allows the creation of new operators
- ✓ **Default Directory and File** setup, which allows the configuration of a default program file and directory
- ✓ **Modem** setup, which allows PC and modem configuration

4.1 Operator

This optional menu selection may be used to create new users and maintain existing operators. The individual designated as the Master (Level 0 access) during the program initialization process, has access to all program options and features. The Master may, however, designate an alternate Master for Level 0 or limited access to Levels 1, 2 and 3 as described in the following paragraph.

FIGURE 4-1:Main Menu - Operator Setup

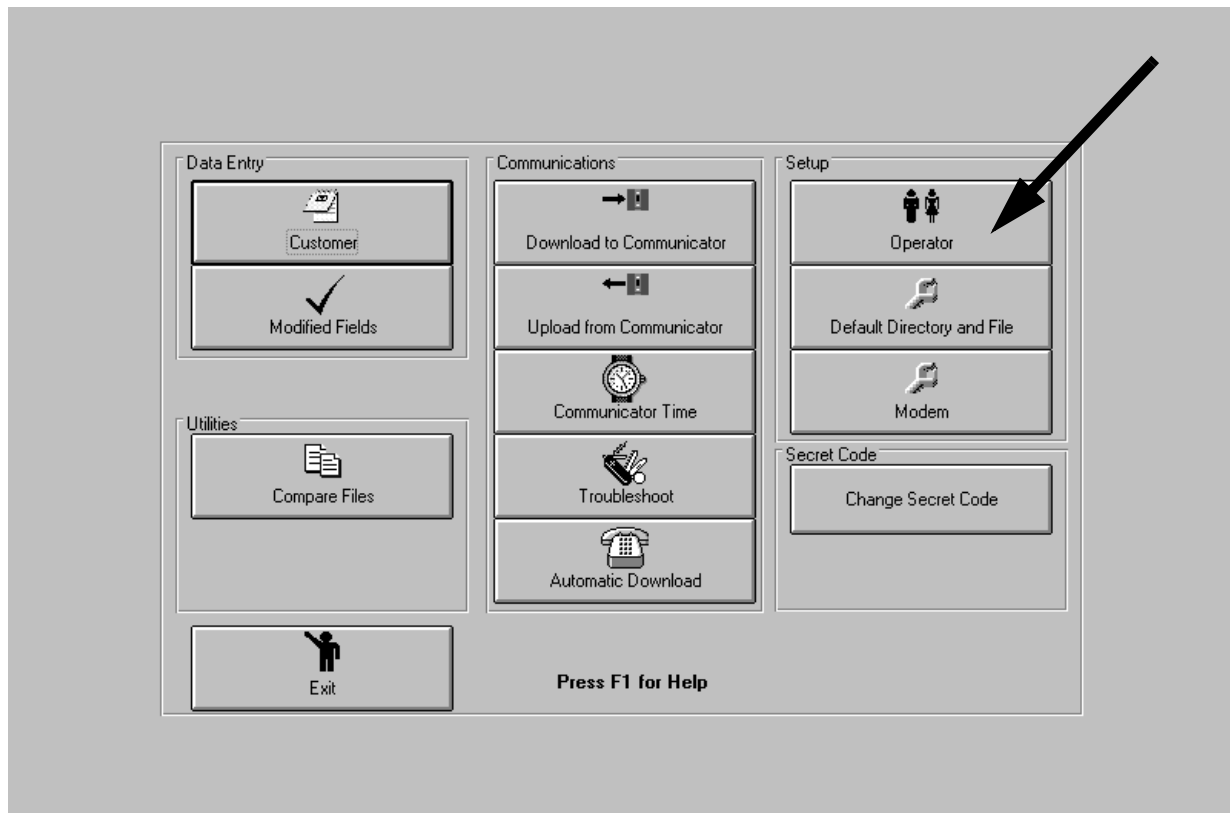


Figure 4-2 shows the window which will be displayed by clicking the **Operator** button. The Name fields in this display will contain the name of the individual who initially installed the PK-41 IUD program and is designated the master. This window allows the master to create alternate masters and designate individuals with lower access levels.

FIGURE 4-2:Operator Information

The screenshot shows a window titled "Operator Information". It contains four input fields: "Last Name" with "SMITH", "First Name" with "JOHN", "Operator Password" with "FIRE", and "Access Level" with "0" and "Master" in a dropdown menu. Below these fields are two rows of buttons: the first row has "Print", "New", "Update", and "Delete"; the second row has "First", "Previous", "Next", "Last", and "Search". At the bottom center is a button labeled "Exit to Main Menu" with the text "Press 'F1' for help" below it. In the bottom right corner, there is a "Record Count" label followed by a small box containing the number "1".

The Record Count displayed in the lower right corner of the window indicates the number of individuals with access to the program. The count following initialization should be 1, since the program installer (master) is the only one with initial access.

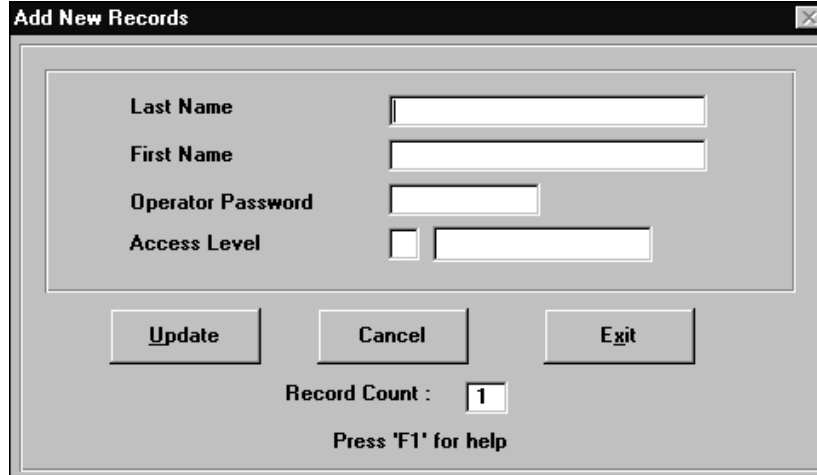
In the window displayed in Figure 4-2, clicking the **Print** button will allow printing of the current operator window or the entire operator database. Clicking the **New** button adds new operators. Clicking the **Update** button allows modification of the current operator information. Clicking the **Delete** button deletes (with verification) the current operator. The remaining buttons (except the **Exit** button) allow navigation through the operator database, in order to view the operators who have already been entered.

To add a new operator to the access list, click the **New** button. The window shown in Figure 4-3 will appear. Type the Last Name, First Name, Password and access level for the new individual. Complete each entry by pressing the **Enter** key or clicking on the next field with the mouse pointer. When the password has been entered and the **Enter** key pressed, the cursor will move to the Access Level box. Typing the desired Access Level will automatically cause the adjacent box to display the allowed function for the level. Available Access Levels are as follows:

- 0 = Master User (all functions)
- 1 = Upload/Download
- 2 = Upload Only
- 3 = View/Print Files

Clicking the **Cancel** button will clear all data entered in this window prior to Updating. Clicking the **Update** button will store this information and increment the Record Count by 1. The fields will clear in preparation for new input data. If no new user is to be added, click the **Exit** button to return to the **Main Operator** window. From this window click **Exit to Main Menu** to return to the Main Menu selections.

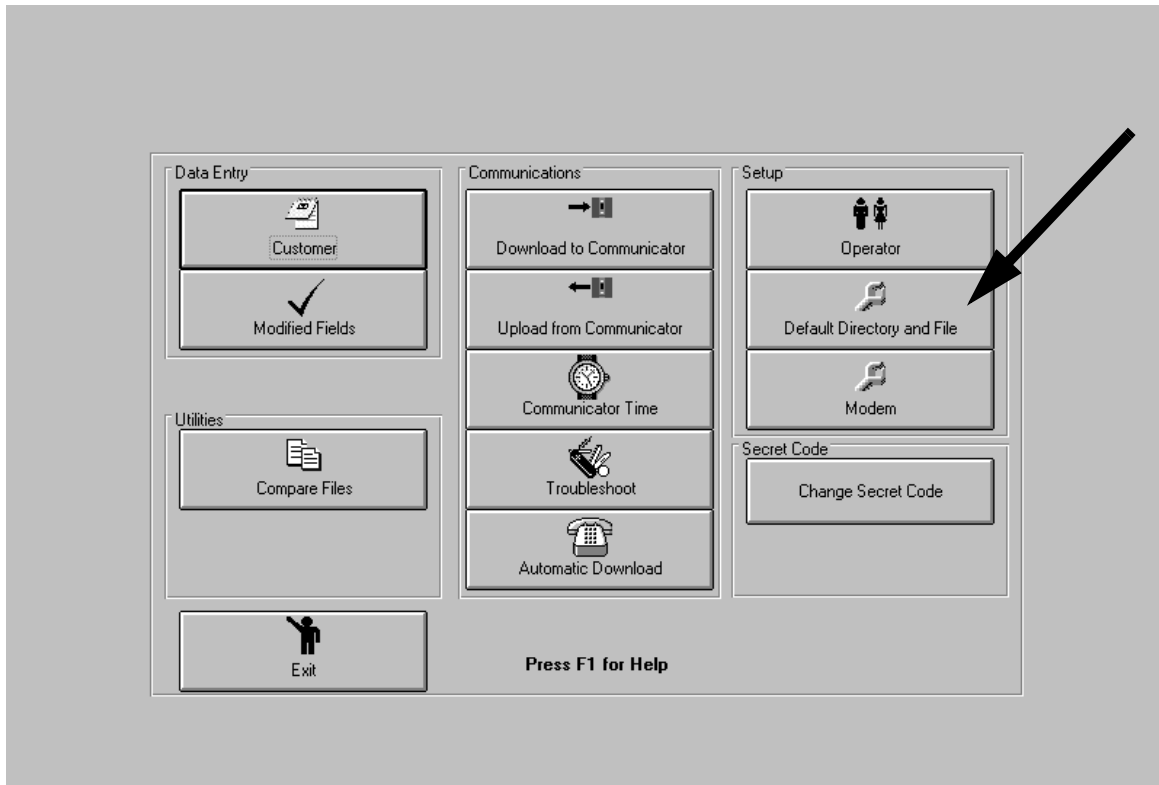
FIGURE 4-3:New Access



4.2 Default Directory and File

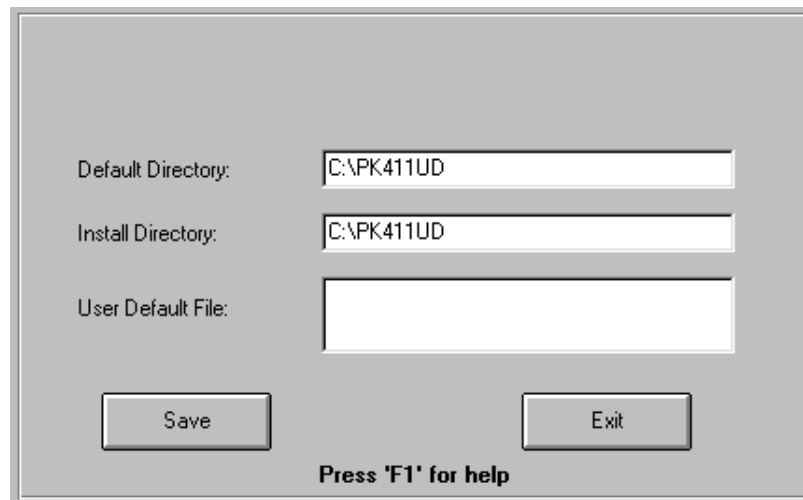
Click the **Default Directory and File** button on the Main Menu to customize default directories and program files.

FIGURE 4-4:Main Menu - Configure Directories and Files



Clicking the **Default Directory and File** button will cause the window shown in Figure 4-5 to appear.

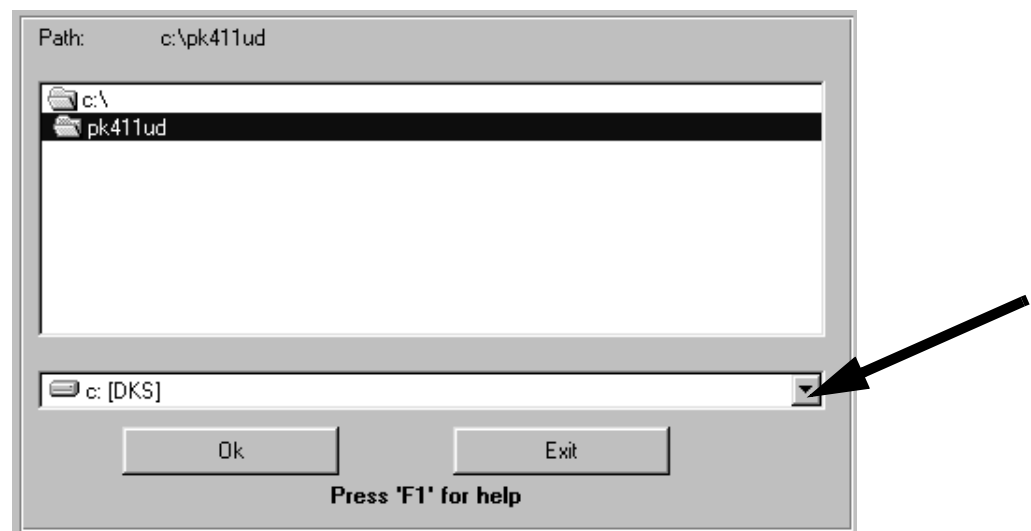
FIGURE 4-5:Default Selections



4.2.1 Default Directory

The field which is labeled **Default Directory** displays the drive and directory name, selected by the program, which will hold files created by the program. In this example, **C:\PK411UD** is the default path. The drive and/or directory name may be changed by clicking in the white text block. The window shown in Figure 4-6 will be displayed.

FIGURE 4-6:Path Locator



This window allows the user to select an alternate path for saving program files by clicking the Down Arrow symbol in the bottom text block and selecting from the available choices. Clicking the OK button will save the selection and close the Path Locator window, returning to the window shown in Figure 4-5.

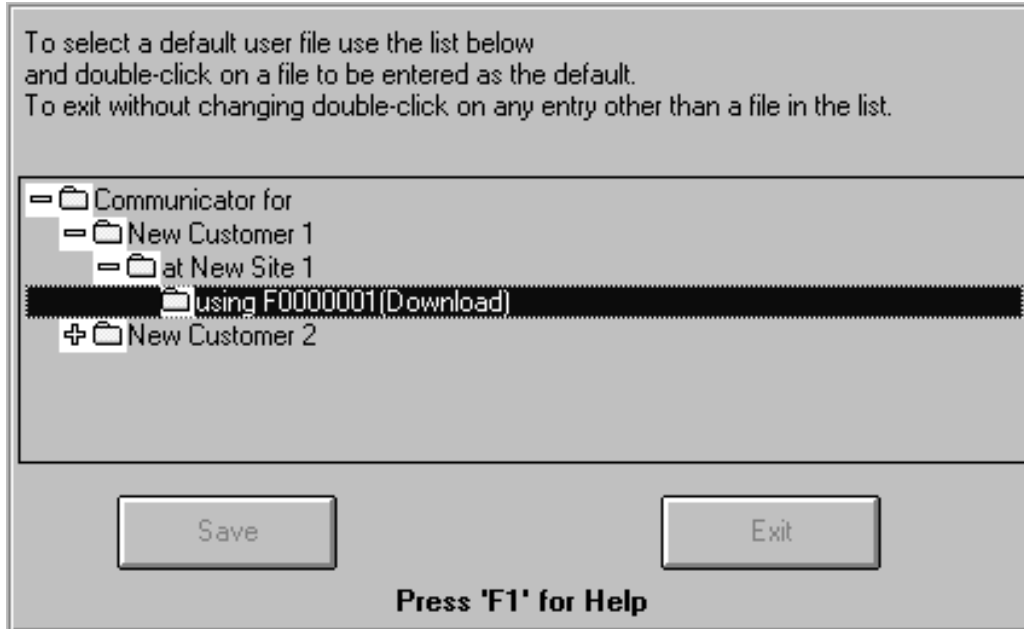
4.2.2 Install Directory

The **Install Directory** field displays the drive and directory name where the PK-411UD program was installed. This field is for informational purposes only and cannot be changed.

4.2.3 User Default Files

The **User Default File** field allows the user to select a file name which will be used as the default or template file for future programming. Clicking in the **User Default File** text block will cause the window shown in Figure 4-7 to be displayed.

FIGURE 4-7:User Default Files

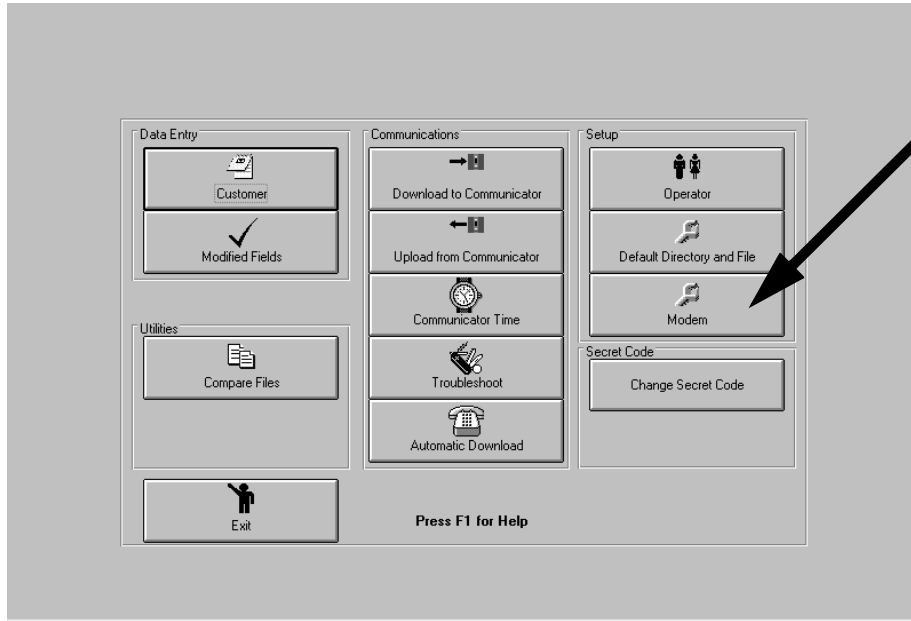


In order to view all available user files, it may be necessary to expand the display entries by clicking the plus (+) signs preceding each entry. Click all plus (+) signs until only minus (-) signs appear. The available files follow the customer and site names. In Figure 4-7, F0000001 is one of the available user files. Double click the file to be used as the Default User File. The window will close and the selection will then appear in the Default User File text block. To exit the window illustrated in Figure 4-7 without selecting a file, double click any entry in the display except a user file. The program will return to the window displayed in Figure 4-5. Save all selections by clicking the **Save** button. To exit the window without saving the changes, click the **Exit** button.

4.3 Modem

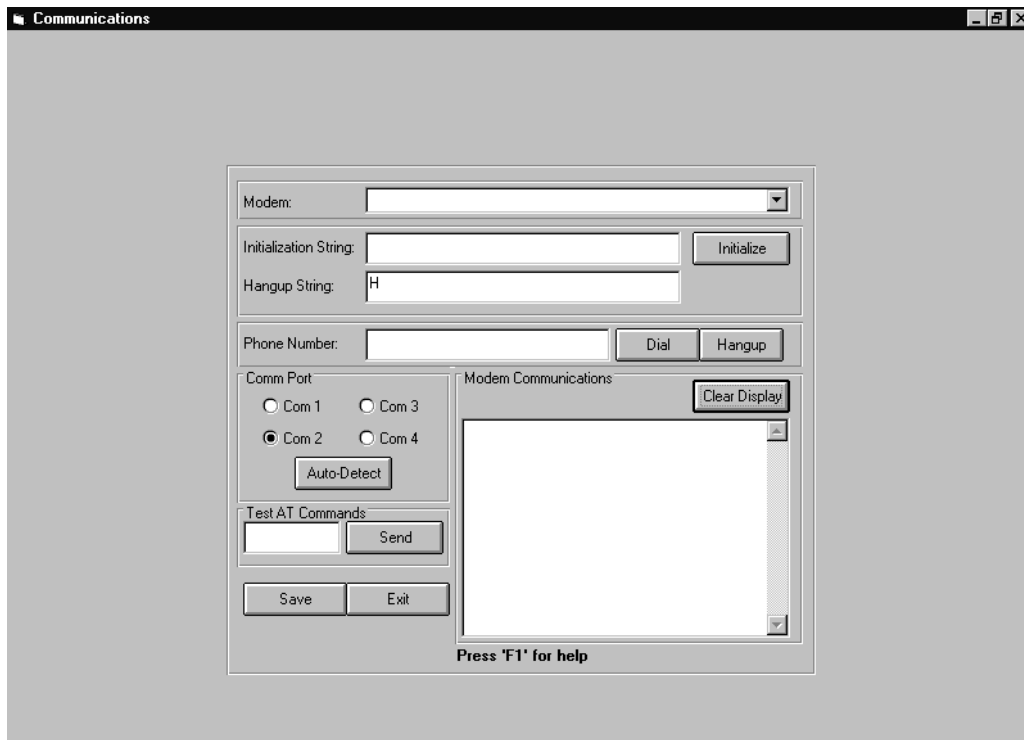
The PK-411UD software must be configured for compatibility with the user's service terminal (PC) communications ports and modem setup. Click the **Modem** button in the Main Menu to configure the service terminal for proper modem operation.

FIGURE 4-8:Main Menu - Configure Modem



Clicking the **Modem** button will display the options window shown in Figure 4-9.

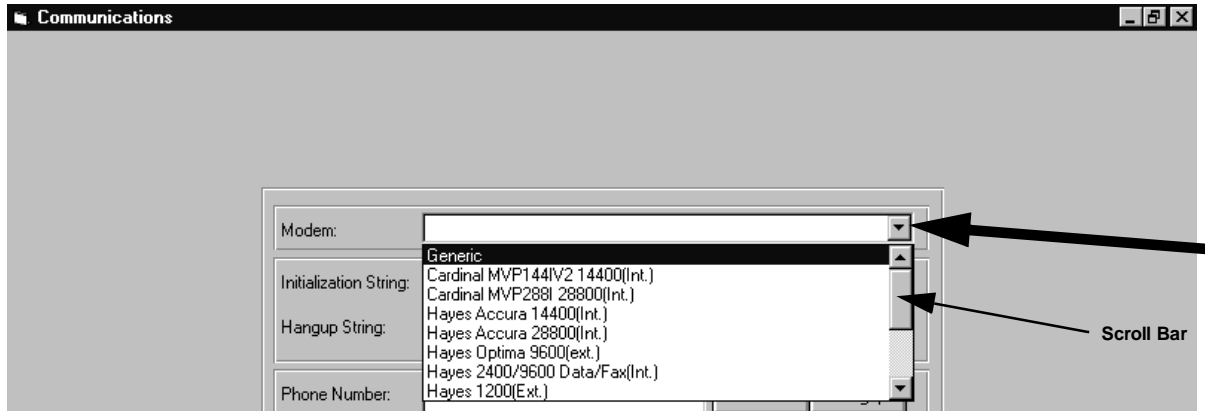
FIGURE 4-9:Configure Modem



4.3.1 Modem

The **Modem** field is used to select the type of modem being used. Clicking the Down Arrow symbol to the right of this block will cause a pull-down menu to appear with the list of available modem options as shown in Figure 4-10. Use the mouse pointer to view additional modems by moving the scroll bar which is located to the right. Select the desired modem by clicking the appropriate choice. The selection will appear in the **Modem** text block.

FIGURE 4-10:Modem Selection

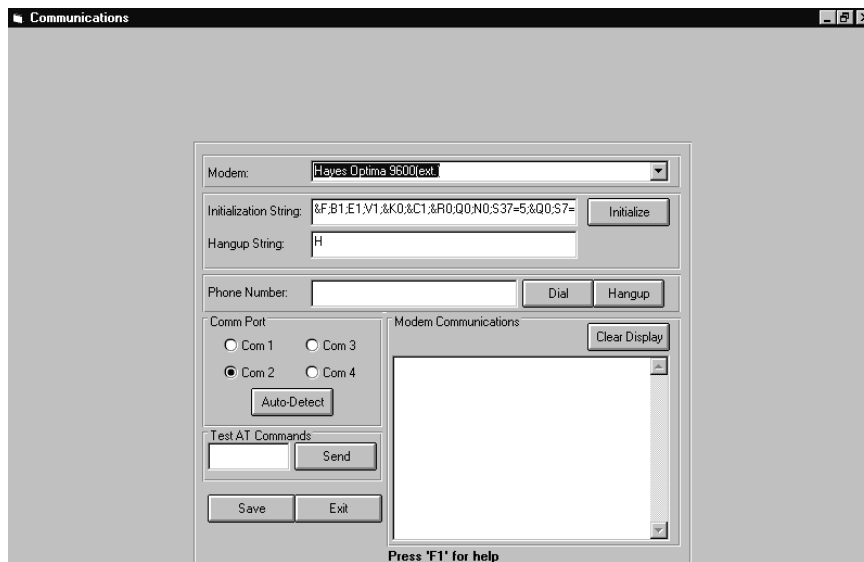


Note that it is possible to add to the existing modem list by clicking in the Modem text block and typing the name of a modem model. The Initialization String and Hangup String can then be customized as described in the following paragraphs. After clicking the **Save** button, the new modem(s) will be saved with the Initialization String and Hangup String and the modem name will appear in the pull-down menu.

4.3.2 Initialization String

Selecting a modem from the existing list will cause the standard **Initialization String** for the selected modem to be entered in the text block as illustrated in Figure 4-11. The **Initialization Strings**, for the modems which appear in the drop-down window, cannot be changed. AT Commands, which appear in the **Initialization String** text block, are separated by semicolons (;). The semicolons allow all commands to be sent, even if one should fail. If the user wishes to customize a specific initialization string, select the appropriate modem which will cause an initialization string to appear in the text block. Change the name of the modem by clicking in the **Modem** text block and typing a new name. The string may now be customized by clicking in the **Initialization String** field and entering or deleting the desired information which may be found in the appropriate modem manual.

FIGURE 4-11:Initialization String



4.3.3 Hangup String

The **Hangup String** field is used to enter the modem command required to hangup or disconnect the modem from the phone line. The factory default is 'H'. Refer to the specific modem manufacturer's manual for the required Hangup String and enter the appropriate information by double-clicking in the Hangup text block and typing the new data.

4.3.4 Communication Port

Comm Port selection (COM1 through COM4) determines the location of the physical connection for the modem. An internal or external modem may be used. This selection depends on the service terminal's available serial connectors. Refer to the service terminal (PC) technical manual for additional information. An **Auto-Detect** button is provided which allows the software to determine which port is connected to the modem. Clicking on the **Auto-Detect** button will cause the software to send modem test signals to all ports. Messages detailing the presence or absence of a modem will be displayed in the Modem Communications text block as the tests are generated. If multiple modems are installed, the first modem found will be selected. If no modem is detected, the window shown in Figure 4-12 will be displayed.

FIGURE 4-12: No Modem Found Window



The Baud Rate, which is the data transmission speed, is fixed at 1200 bps (bits per second).

4.3.5 Modem Initialization and Testing

Test features have also been incorporated into the modem window. Clicking the **Initialize** button will send the initialization string to the PC modem in order to test the modems functionality. Test messages will be displayed in the Modem Communications text block. Entering a modem phone number in the corresponding field and clicking the **Dial** button will test the service terminal modem's ability to dial out. Clicking the **Hangup** button will cause the service terminal to disconnect the call to the modem.

If during initialization, a particular AT Test fails, the information will be displayed in the **Modem Communications** text block. Enter the failed AT Test in the **AT Test Command** text block and click the **Send** button. The designated AT Test will be generated to the modem with the test results being displayed in the **Modem Communications** text block. The **Clear Display** button clears all messages from the **Modem Communications** text block.

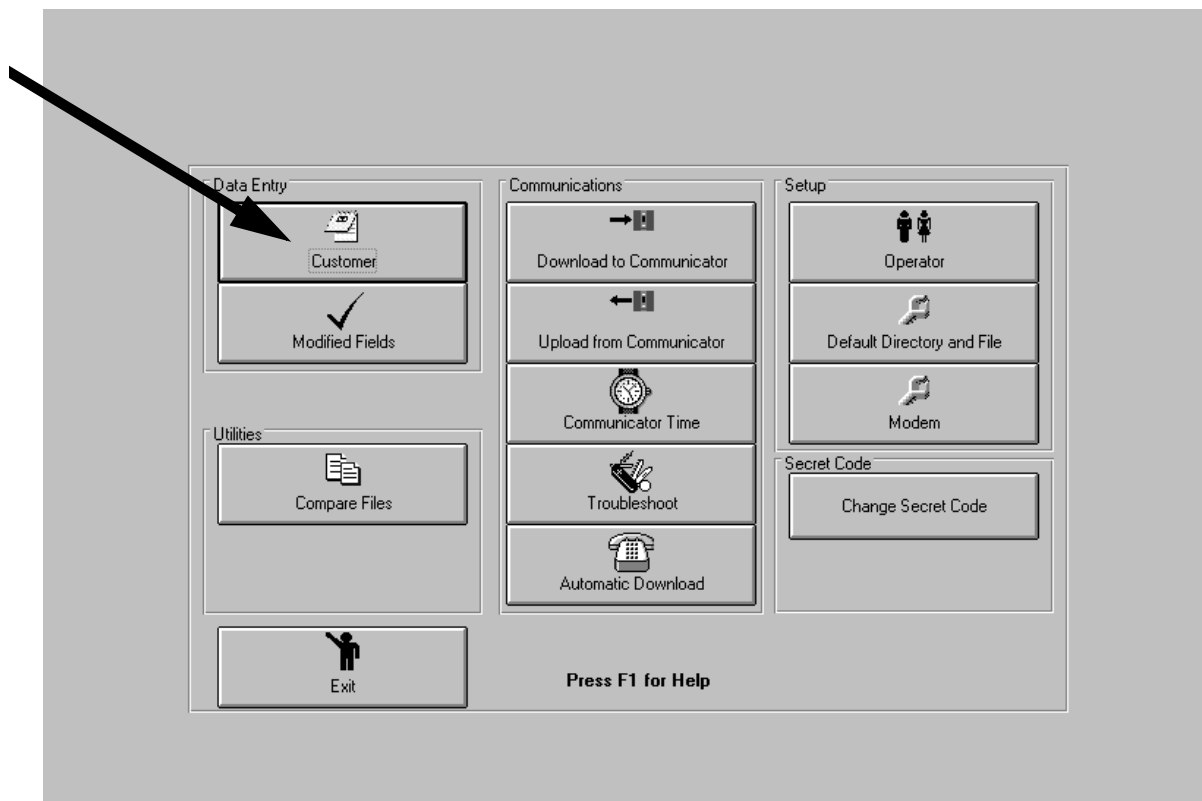
4.3.6 Saving Modem Settings

After completing the communications configuration, click the **Save** button to store the modem selection, Initialization String, Hangup String and Comm. Port selection and return to the Main Menu. These settings should not require further editing unless a different modem is to be used. Clicking the **Exit** button will access the Main Menu without saving the settings just selected.

CHAPTER 5 *Data Entry*

The Data Entry functions include the **Customer** option which allows the user to designate a customer name, customer site and create a program file for the specific 411UD/411UDAC. The **Modified Fields** option allows the user to view the programming features which have been altered during editing.

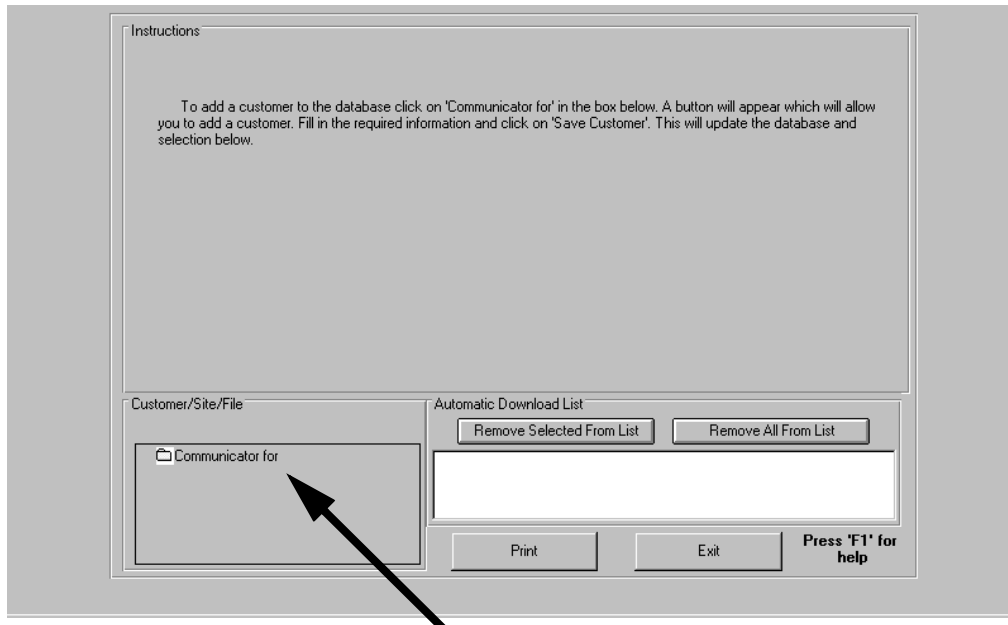
FIGURE 5-1:Main Menu



5.1 Customer

The Customer option allows the user to enter and store specific customer and site location information as well as the program file for the 411UD/411UDAC located at the customer site. Note that program files created on the PC will be saved as files with a **.dl1** (download) extension and files retrieved from an 411UD/411UDAC Digital Communicator will be saved with a **.ul1** (upload) extension. Clicking the **Customer** button, during the first use of the program, will display the window shown in Figure 5-2. Since customer information has not yet been entered, the Customer/Site/File text block will not contain any customer information. Note that on subsequent use of the **Customer** button, customer information may appear in the window.

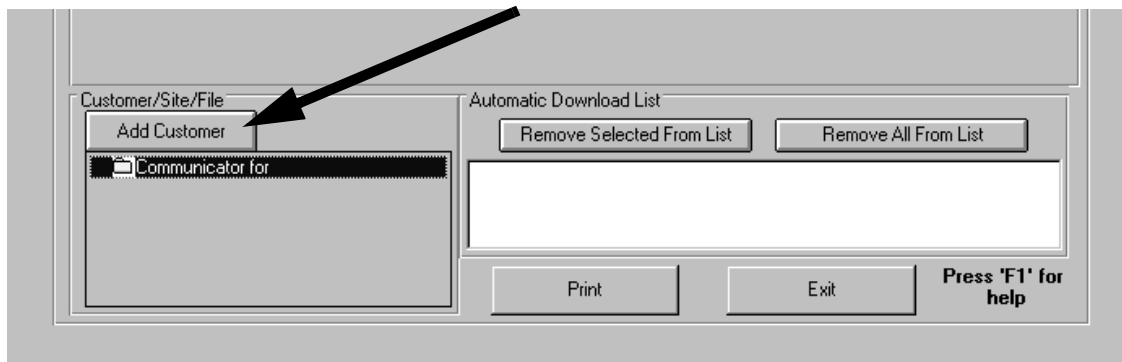
FIGURE 5-2:Customer Files



5.1.1 Adding Customer to Database

To add a customer to the database, begin by clicking the **Communicator For** text which is located in the bottom left corner of the window. An **Add Customer** button will appear as shown in Figure 5-3. This step must be followed each time a new customer is to be added.

FIGURE 5-3:Add Customer Button



Click the **Add Customer** button shown in Figure 5-3 to enter a new customer into the database. The blank customer information window shown in Figure 5-4 will be displayed and will allow the entry of customer information.

FIGURE 5-4:Customer Entry window

Customer Files

Customer Information - 1 Customers

Customer Name: New Customer 1

Customer Street Address 1:

Customer Street Address 2:

Customer City:

Customer State:

Customer Zip:

Customer Phone Number:

Save Customer

Adding a site is done in the same fashion as adding a customer. Select the customer that you want to add a site to and buttons will appear labeled 'Add Site' and 'Delete Customer'. Pressing 'Add Site' will add a site to the customer database and display fields where information about the site can be entered. If it is necessary to delete a customer, press the 'Delete Customer' button. All information about sites and files will also be deleted. BE CAREFUL!!!!!!

Customer/Site/File

Add Site Delete Customer

Communicator for

New Customer 1

Automatic Download List

Remove Selected From List Remove All From List

Print Exit Press 'F1' for help

The optional customer text which is entered in each field is used as a reference only. The customer information is not sent to the 411UD/411UDAC during programming. To enter the **Customer Name**, highlight the text in the white block to the right of this field and then type the customer name. Click in the Address 1 text block or use the Tab key to move to the next field and type the appropriate information. Continue this process until the desired information is entered in each block. Note that it is not necessary to enter text into every text block. Information is not saved until the **Save Customer** button is clicked.

Note in Figure 5-4, that the Add Customer button shown in Figure 5-3, has changed to the **Add Site** button and the **Delete Customer** button is now displayed. To delete a customer from the database, click the plus (+) sign located in front of the text **Communicator for** to view customer names in the database. To view all customers, click all plus (+) signs which appear in the **Customer/Site/File** block. Click the customer name to be deleted and click the **Delete Customer** button. A confirmation window will appear asking if you are sure that you wish to delete the customer. *Clicking Yes will delete the customer, customer site and associated program files. Clicking No will cancel the deletion.*

5.1.2 Add Customer Site Information to Database

Information about the location of the customer's 411UD/411UDAC may also be added to the database. Click the **Add Site** button to display the window shown in Figure 5-5.

FIGURE 5-5:Customer Site Information

The optional customer site text which is entered in each field is used as a reference only, except for the **Site Phone Number**, which must be entered to allow the service terminal software to call the 411UD/411UDAC. The remaining customer site information is not sent to the 411UD/411UDAC during programming. The Customer Name located at the top of the window is used to reference the site being edited and cannot be changed. To enter the **Site Contact Name**, highlight the text in the white block to the right of this field and then type the site contact name. Click in the Site Street Address 1 text block or use the Tab key to move to the next field and type the appropriate information. Continue this process until the desired information is entered in each block. Note that it is not necessary to enter text into every text block. Click the **Save Site Information** button to save the information.

After clicking the **Add Site** button shown in Figure 5-4, the **Add Site** and **Delete Customer** buttons are replaced by **Add File** and **Delete Site** buttons. To delete a site from the database, click the plus (+) sign located in front of the text **Communicator for** to view customer names and sites in the database. To view all customers and sites, click all plus (+) signs which appear in the **Customer/Site/File** block. Click the customer site to be deleted and click the **Delete Site** button. A confirmation window will appear asking if you are sure that you wish to delete the site. *Clicking Yes will delete the customer site and associated program files. Clicking No will cancel the deletion.*

5.1.3 Add Program File to Database

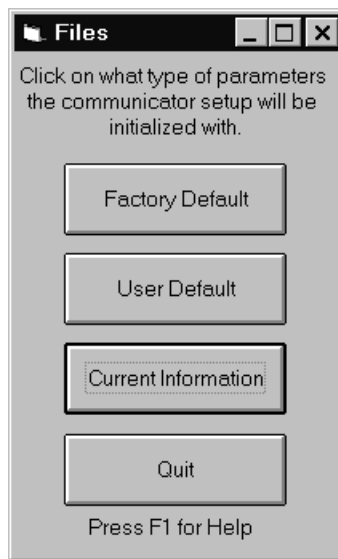
The user may now create the 411UD/411UDAC Digital Communicator program file which will be downloaded to the communicator at the customer's site. Clicking **Add File** will display the window shown in Figure 5-6.

FIGURE 5-6:Filename

A default filename appears in the text block. *Note that a program file has not yet been created, only a program filename.* The default filename may be used or a new name can be entered by highlighting the text and typing in the new filename. A maximum of 8 characters can be entered. The **.dl1** (download) extension will be added automatically when the filename is saved. Click the **OK** button to add the new filename to the database. Click the **Cancel** button to prevent the addition of the filename to the database. Clicking the **OK** button will automatically load the factory default program if this is the first program file being created with the PK-411UD software. The window illustrated in Figure 5-8 will appear. Clicking the OK button in this window will create a new program file with the filename created in Figure 5-6.

If program files have previously been created using the PK-411UD software, clicking the OK button in the window illustrated in Figure 5-6 will cause the window shown in Figure 5-7 to be displayed. The **User Default** button will appear only if a Default File has been assigned (refer to Figure 4-5 on page 19). The **Current Information** button will appear only if a program file has been recalled and is currently in memory.

FIGURE 5-7:Existing File Selection



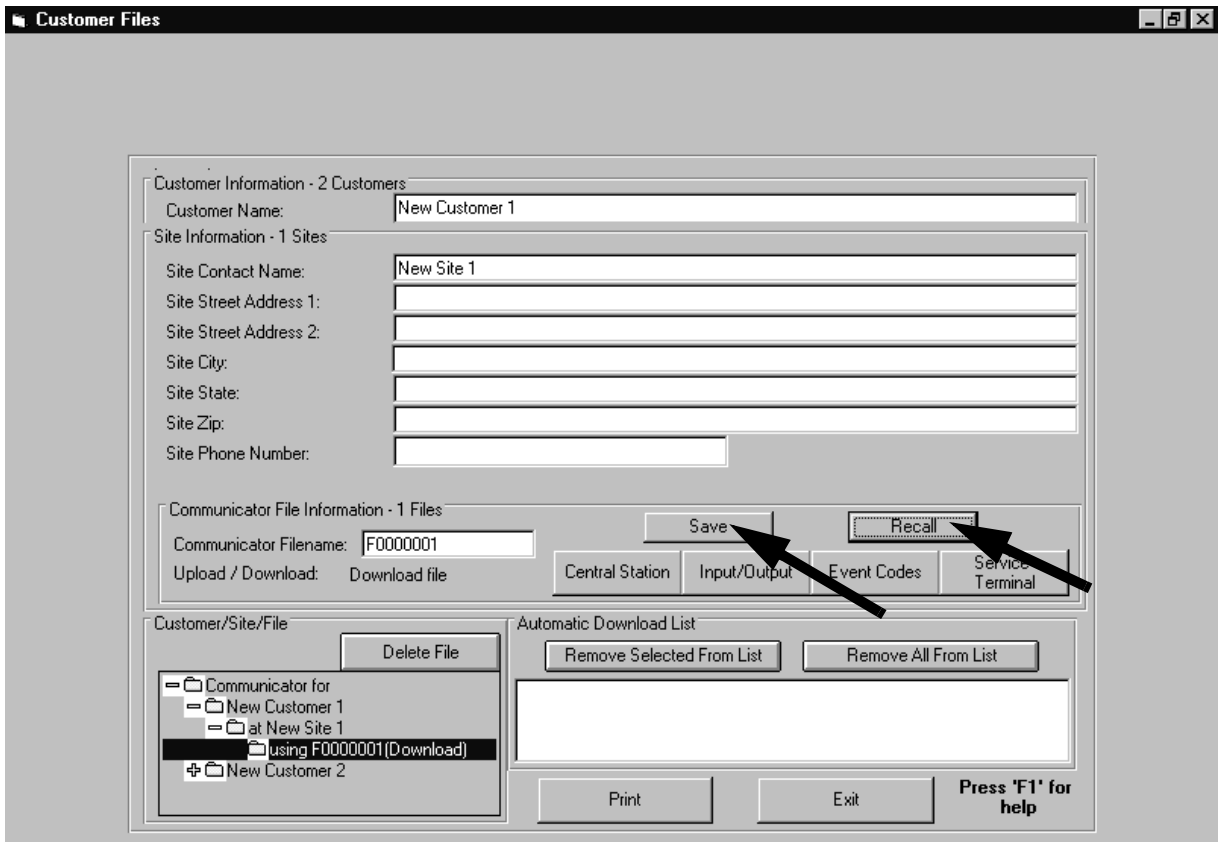
To create a new program file referenced by the filename created in Figure 5-6, click the **Factory Default, User Default or Current Information** button. The window shown in Figure 5-8 will appear, indicating that a new program file, for the current customer, has been created.

FIGURE 5-8:New File



Clicking the OK button will cause new buttons to appear in the Customer Files window, as illustrated in Figure 5-9.

FIGURE 5-9:Customer Files Window - Central Station

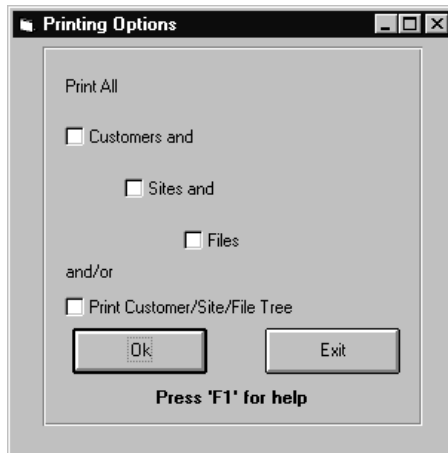


The **Save** button is used to save new or updated information, entered in this window, to the filename indicated in the **Communicator Filename** text block. The **Recall** button is used to display the data stored in the file indicated in the **Communicator Filename** text block.

5.1.4 Print Options

The **Print** button, located at the bottom of the window, is used to print customer, site and program file information. If **Communicator for** is highlighted in the Customer Files window shown in Figure 5-9, clicking the Print button will display the window shown in Figure 5-10.

FIGURE 5-10:Printing Options Window - Print All



This option allows the user to print the database content for all customers, all sites and all program files or any combination of choices.

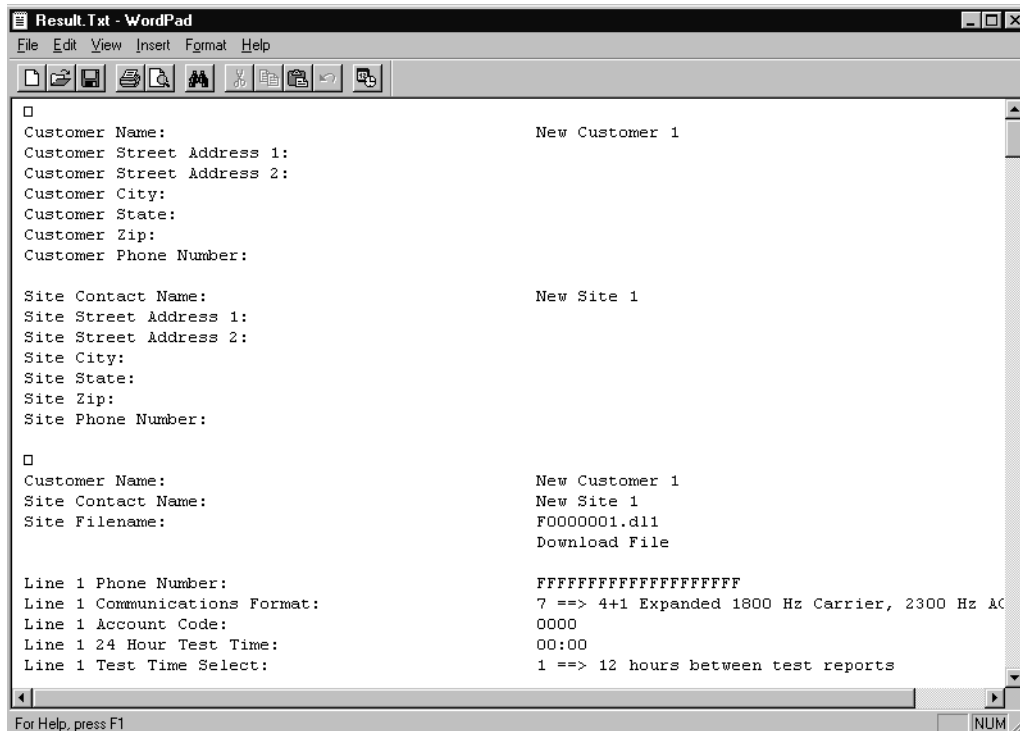
If a specific **Customer**, **Site** or **File** is highlighted in the Customer window shown in Figure 5-9, clicking the Print button will display the window shown in Figure 5-11. This option allows the user to print the database content for the currently selected customer, site or program file or any combination of these choices. If **File** is highlighted in Figure 5-9, only **File** will be available for printing as shown in Figure 5-11. If **Site** is highlighted in Figure 5-9, **Site** and **File** will be available for printing. If **Customer** is highlighted in the Customer window, **Customer**, **Site** and **File** will be available for printing.

FIGURE 5-11:Print Current



After the print selections have been made, clicking the **OK** button will cause the window shown in Figure 5-12 to be displayed. This WordPad text window displays the data which was selected for printing. Clicking **File** in the menu bar and then clicking **Print** in the **File** drop-down menu will start the print process.

FIGURE 5-12:Print Text



5.1.5 Customizing Program Files

Note that, in addition to the print option, a series of four buttons, which are used for programming, are now displayed in the window shown in Figure 5-9. All program information for the current customer and site will be stored under the filename which appears in the text block labeled **Communicator Filename**. Below this block, the Upload/Download field will indicate whether the file is an Upload File (retrieved from a communicator) or a Download File (created on the PC). Upload files are automatically saved with a **.ul1** extension and Download files are saved with a **.dl1** extension.

5.1.5.1 Central Station Programming

To program Central Station data, click the **Central Station** button to display the window shown in Figure 5-13.

FIGURE 5-13:Central Station Programming

The screenshot shows a software window titled "Central Station Programming". It is organized into several panels:

- Primary Central Station:** Phone Number (text field with 15 'F's), Communications Format (dropdown menu showing "E ==> Contact ID Format"), Account Code (text field with "0000"), 24 Hour Test Time (text field with "00:00"), and Test Time Interval (dropdown menu showing "0 ==> 24 hours between test reports").
- Secondary Central Station:** Similar fields to the primary station, with the Test Time Interval dropdown menu highlighted.
- Central Station Backup Reporting:** Backup Reporting (dropdown menu showing "0 ==> Primary always, secondary only if primary fails").
- Phone Line 1:** Radio buttons for Touch Tone (selected) and Rotary. Make/Break Ratio section with radio buttons for 67/33 (selected) and 62/38.
- Phone Line 2:** Similar radio buttons and Make/Break Ratio section as Phone Line 1.
- Communicator:** Radio buttons for Disable (selected) and Enable.
- Trouble Call Limit:** Radio buttons for Disabled (selected) and Enabled.
- Buttons:** "Save" and "Exit" buttons at the bottom center. "Press 'F1' for help" text at the bottom right.

Enter the appropriate programming data in this window. The Central Station phone numbers are the numbers the digital communicator uses to contact the Central Station. Click in the far left of the Phone Number text block for the Primary Central Station text block. The cursor should appear to the left of the first 'F' in the text block. Type the appropriate phone number. Each typed digit will replace an 'F' in the text block. When the entire phone number has been entered, any remaining 'Fs' indicate the end of the number. Follow the same procedure for entering the **Service Terminal 2 Phone Number**. Valid phone number entries are '0' through '9'. In addition, 'A' through 'F' can be entered to represent the following:

- A = * (symbol on a touch tone phone)
- B = # (symbol on a touch tone phone)
- C = look for secondary dial tone for up to 2 seconds, then dial anyway
- D = 3 second pause
- E = 5 second pause
- F = end of phone number

Click the down arrow to the right of the **Communications Format** text block, to view the available format options as illustrated in Figure 5-14. Use the scroll bar to view all formats. Clicking the desired communications format will cause the selection to appear in the Communications Format text block.

FIGURE 5-14: Communications Format

Each 411UD/411UDAC digital communicator is assigned a unique Account Code by the Central Station, which is used for identification purposes. Double click in the **Account Code** text block and enter the appropriate three or four digit account code. The number of digits entered will match the Communications Format selection. If the communications format selected is '2, 3, 4 or 5', a three digit account code will be assigned and must be entered. If the communications format selected is '0, 1, 6, 7, 8, 9, A, B, C, D or E', a four digit account code will be assigned and must be entered.

Double click in the **24 Hour Test Time** text block and enter the time that the digital communicator will call in the 24 hour test message to the Central Station. This entry must be made in military time with valid entries being '0000' (midnight) to '2359' (11:59 PM).

Click the down arrow to the right of the **Test Time Interval** text block to view the available options as illustrated in Figure 5-15. Clicking the desired Test Time Interval will cause the selection to appear in the **Test Time Interval** text block.

FIGURE 5-15: Test Time Interval

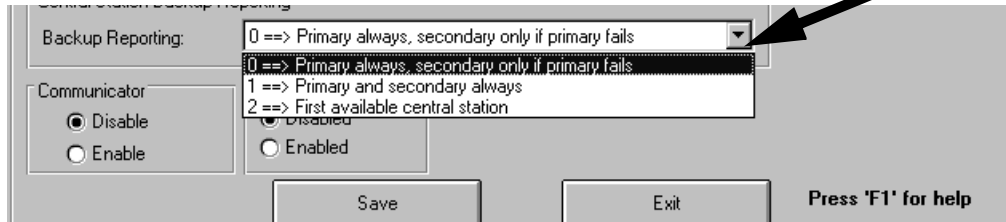
Select the type of phone service being used for Phone Line 1 by clicking the **Touch Tone** or **Rotary** text which is located to the top right of the window. Refer to Figure 5-15 for the location of these selections. A dot will appear in the white circle preceding the selected service.

If Rotary phone service has been chosen, select the **Make/Break Ratio** for Phone Line 1 by clicking **67/33** or **62/38**. Refer to Figure 5-15 for the location of these selections. A dot will appear in the white circle preceding the selected ratio.

After completing all entries for the Primary Central Station, continue programming the Secondary Central Station. Begin by clicking in the far left of the text block for the **Secondary Central Station Phone Number**. The cursor should be flashing to the left of the first 'F'. Type the appropriate phone number. Follow the same procedures used for entering all programming data for the Primary Central Station.

Program Central Station Backup Reporting by clicking the down arrow, located to the right of the **Backup Reporting** text block. A drop-down window with a list of available options will appear, as illustrated in Figure 5-16. Clicking the desired selection will cause the choice to appear in the **Backup Reporting** text block.

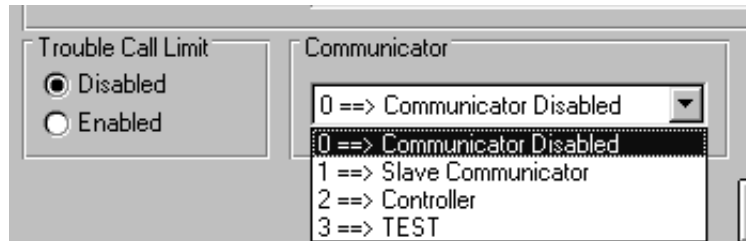
FIGURE 5-16:Backup Reporting



The **Trouble Call Limit** option is located to the left of the **Central Station Program** window. Clicking **Disabled** will allow the communicator to call in all trouble messages to the Central Station, including an unlimited number of repetitive troubles. Clicking **Enabled** will limit the number of repetitive trouble calls to 10 for each unique trouble within a 24 hour period. This will not limit the number of phone line (communications) troubles.

The **Communicator Disable** and **SLAVE Communicator** selections for the 411UD or the **Communicator Disable, Slave Communicator, Controller** and **TEST** selections for the 411UDAC are located to the left of the **Trouble Call Limit** option. Refer to Figure 5-17 for the location of these options. Selecting the **Disable** text will prevent the digital communicator from calling in to the Central Station. Selecting the **Slave** or **Controller** text allows the communicator to send messages to the Central Station.

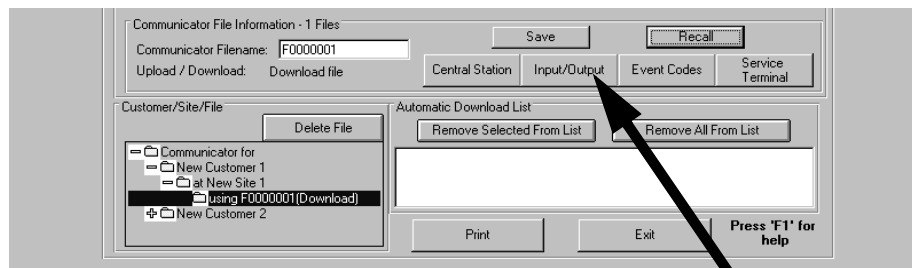
FIGURE 5-17:Communicator Disable /Trouble Call Limit Options



Click the **Save** button to save all information programmed in this window and then click the **Exit** button. Clicking the **Exit** button before clicking the **Save** button will close this window without saving the data entered in this window. The Central Station window will close and the Customer Files window shown in Figure 5-18 will reappear.

5.1.5.2 Input/Output Programming for the 411UD

FIGURE 5-18:411UD Customer Files Window



Clicking the **Input/Output** button on the Customer Files window will cause the window shown in Figure 5-19 to appear.

FIGURE 5-19:411UD Input/Output Window

The Input/Output window allows the programming of each of the four channels and the output relay. In addition, the **AC Loss Delay Timer** can be programmed and the **Trouble Reminder** can be enabled or disabled.

Begin by programming Channel 1. Click the down arrow to the right of the Channel 1 **Function** text block to view the available options as shown in Figure 5-20.

FIGURE 5-20:411UD Input Function Selection

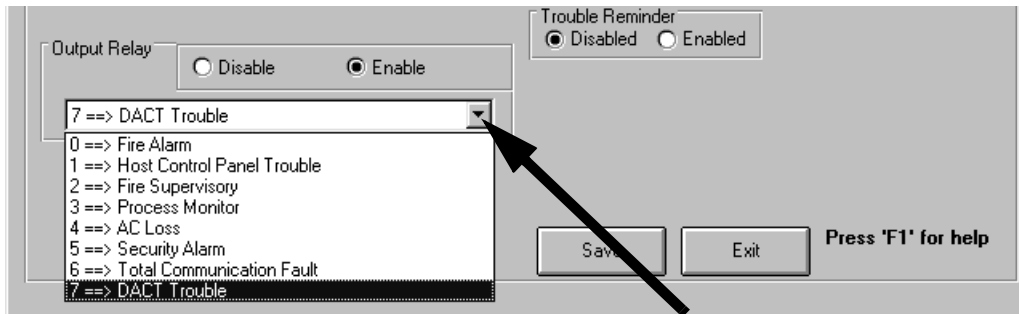
Clicking the desired selection will cause it to appear in the **Function** text block.

The **Delay Timer** text block will be enabled only if function 3 (Process Monitor) or function 5 (Security) is selected. A default entry of zero (0) will not delay the reporting of a process monitor or security alarm to the Central Station. To delay the reporting of either of these functions, double click in the **Delay Timer** text block and enter a delay value of from 1 second to 179 seconds.

The programming of Channel 1 has been completed. Continue with the programming of Channels 2, 3 and 4 by following the same procedures outlined for Channel 1.

To program the **Output Relay**, click the down arrow to the right of the **Output Relay** text block to view the available options as shown in Figure 5-21.

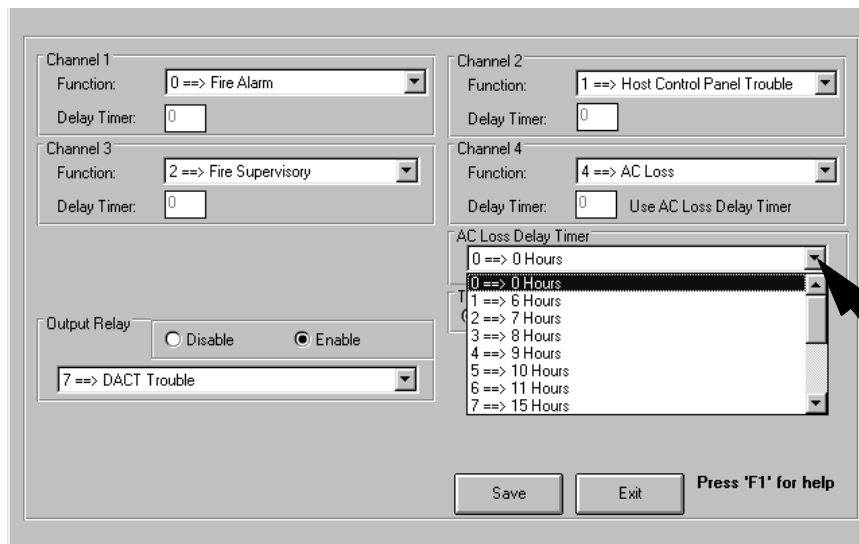
FIGURE 5-21:411UD Output Relay Programming



Clicking the desired selection will cause the choice to appear in the **Output Relay** text block. To enable the relay, click the **Enable** text located above the text block. A black dot will appear in the white circle preceding the text, indicating that the relay has been enabled. To disable the relay, click the **Disable** text. A black dot will appear in the white circle preceding the text, to indicate the relay has been disabled. The programming of the **Output Relay** is complete.

The **AC Loss Delay Timer** option can be programmed in this window if any Channel is programmed as AC Loss. This option allows the digital communicator to delay sending an AC loss message to the Central Station for the selected time period. Click the down arrow to the right of the **AC Loss Delay Timer** text block to view the available options as shown in Figure 5-22. Use the scroll bar to view all of the options in this drop down window. Clicking the desired time delay will cause the selection to be displayed in the **AC Loss Delay Timer** text block.

FIGURE 5-22:411UD Option Programming

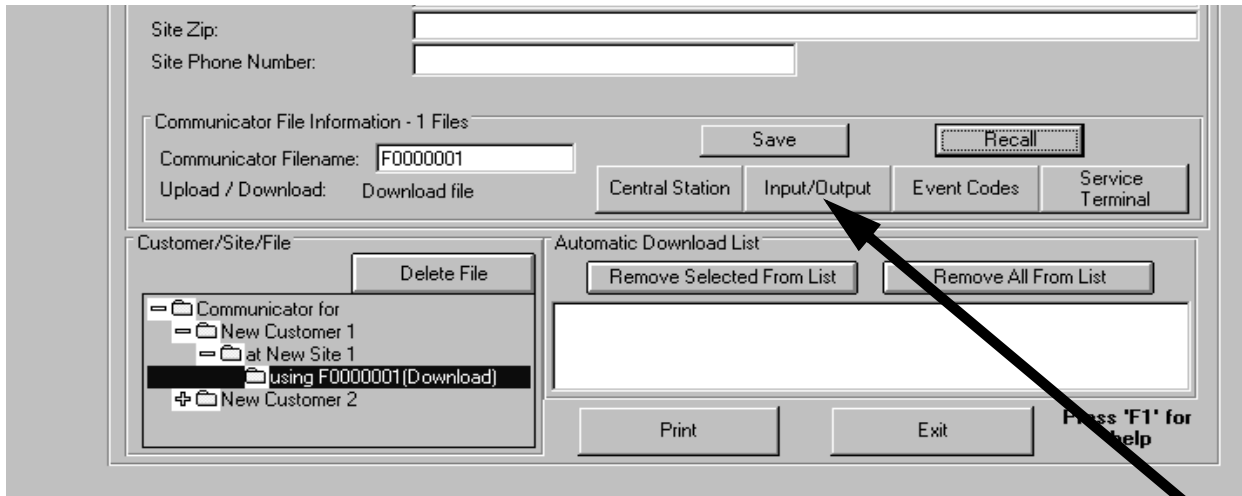


The **Trouble Reminder** option causes the digital communicator piezo to 'beep' every two minutes during a trouble condition, after a trouble silence switch has been pressed. Click the **Enabled** text to enable this feature. A black dot will appear in the white circle preceding the text to indicate the selection of this option. Click the **Disabled** text to disable the **Trouble Reminder** feature. A black dot will appear in the white circle preceding the text to indicate that the option has been disabled.

Click the **Save** button to save all information programmed in this window and then click the **Exit** button. Clicking the **Exit** button before clicking the **Save** button will close this window without saving the data entered in this window. The **Input/Output** window will close and the **Customer Files** window, as illustrated in Figure 5-18, will reappear.

5.1.5.3 Input/Output Programming for the 411UDAC

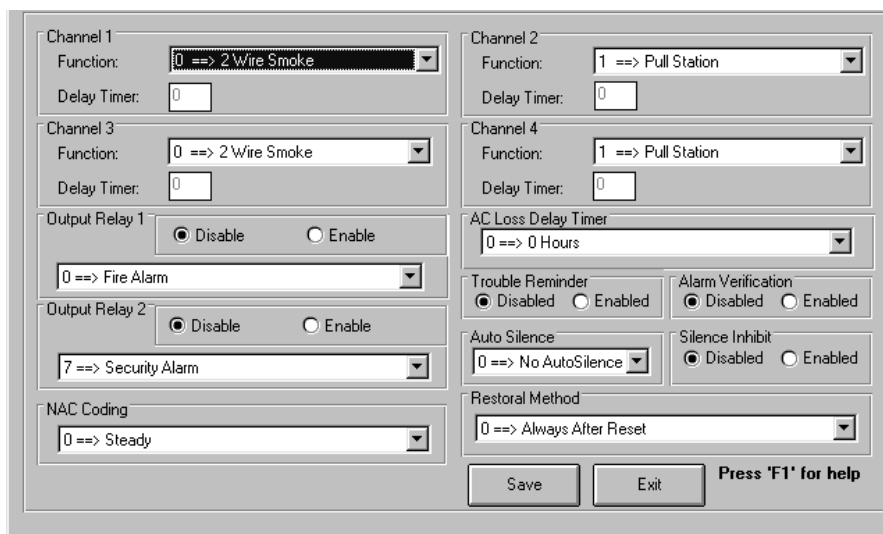
FIGURE 5-23:411UDAC Customer Files Window



Clicking the **Input/Output** button in the **Customer Files** window will cause the Input/Output window shown in Figure 5-24 to appear.

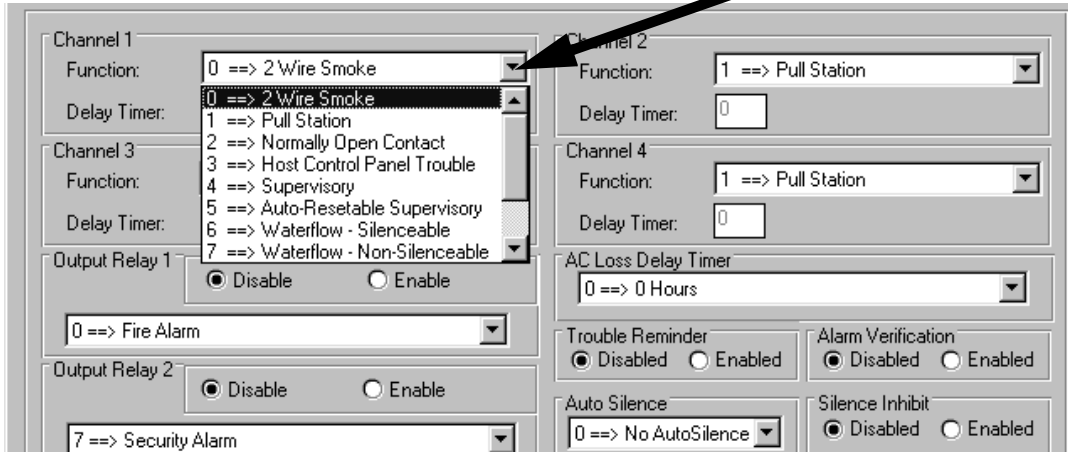
Programming of each of the 4 channels and two output relays is accomplished through the **Input/Output** window. In addition, options for **NAC Coding**, the **AC Loss Delay Timer**, **Auto Silence** and **Restoral Method** as well as the settings for **Trouble Reminder**, **Alarm Verification** and **Silence Inhibit** are selected in this window.

FIGURE 5-24:Input/Output Window for the 411UDAC



Begin by programming Channel 1. Click the down arrow to the right of the **Channel 1 Function** text block, as illustrated in Figure 5-25, to view the available options. Clicking the desired selection will cause it to appear in the **Function** text block.

FIGURE 5-25:411UDAC Channel 1 - Input/output Window

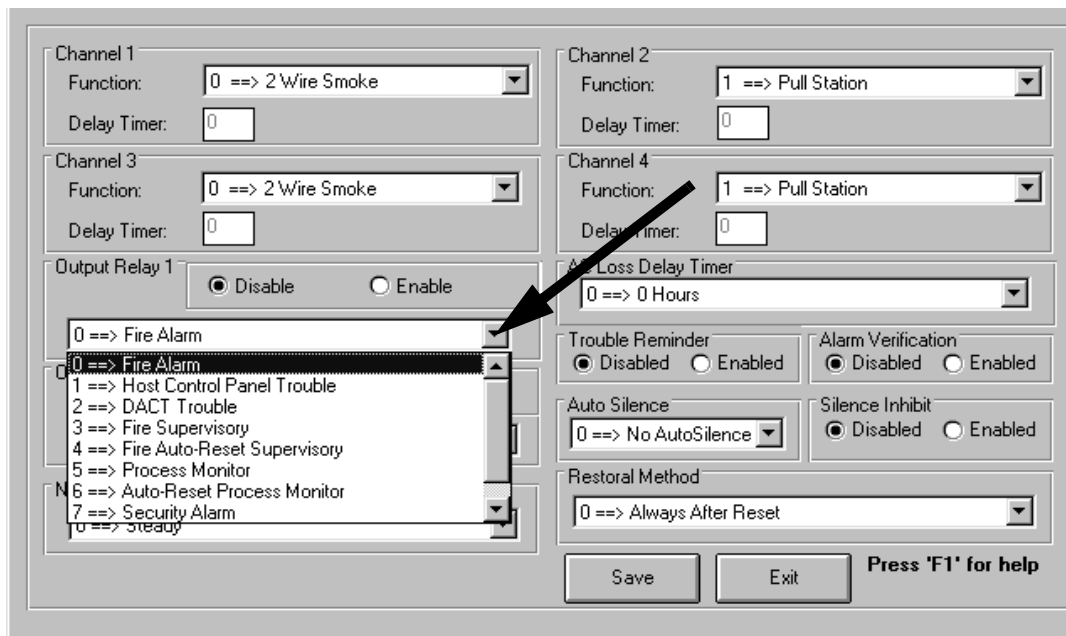


The **Delay Timer** text block will be enabled only if function 6, 7, 8, 9 or A is selected. A default entry of zero (0) will not delay the reporting of these functions to the Central Station. To delay the reporting of any of these functions, double click in the **Delay Timer** text block and enter a delay value of from 1 second to 179 seconds.

The programming of Channel 1 has been completed. Continue with the programming of Channels 2, 3 and 4 by following the same procedures outlined for Channel 1.

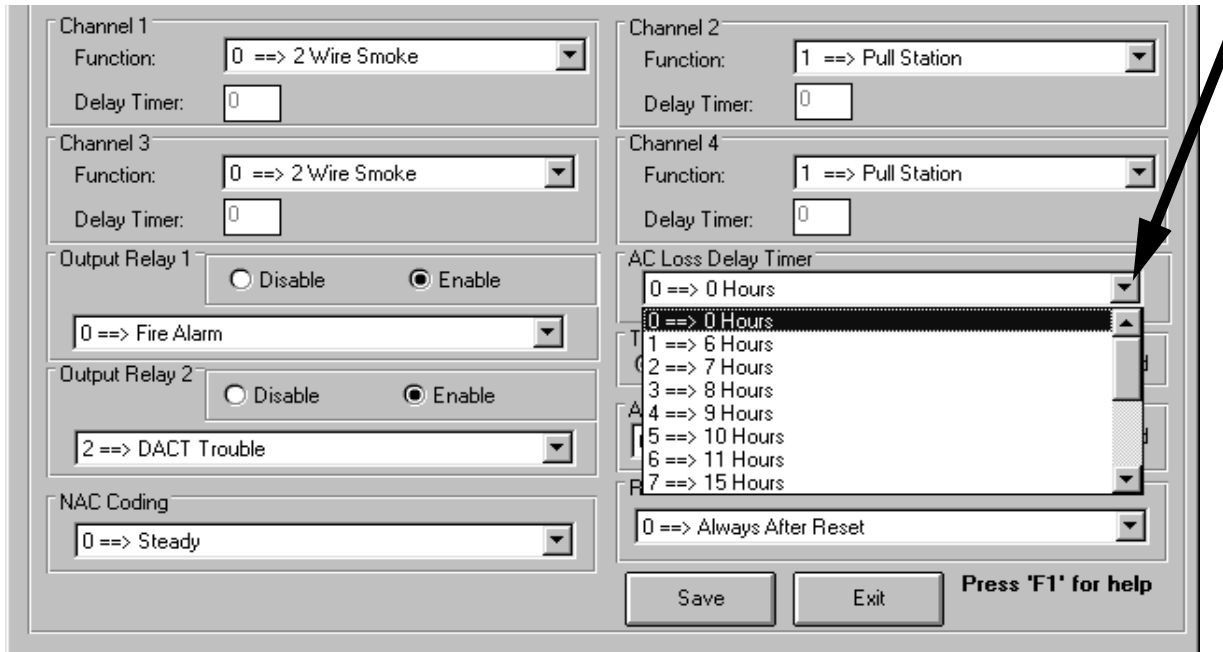
Click the down arrow to the right of the **Output Relay 1** text block, as illustrated in Figure 5-26, to see the available options. Select one of the options displayed to program the **Output Relay**. Program Relay 2 in the same manner.

FIGURE 5-26:411UDAC Output Relay Options



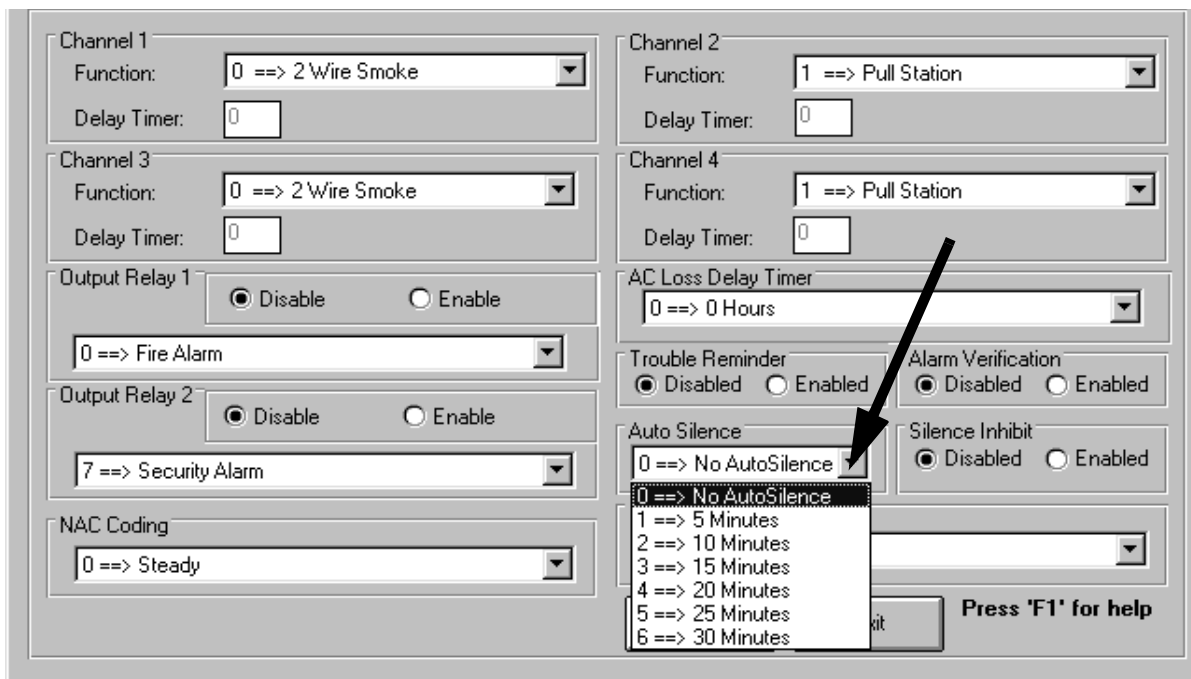
The **AC Loss Delay Timer** option can be programmed in this window if any Channel is programmed as AC Loss. This option allows the digital communicator to delay sending an AC loss message to the Central Station for the selected time period. Click the down arrow to the right of the **AC Loss Delay Timer** text block to view the available options as shown in Figure 5-27. Use the scroll bar to view all of the options. Clicking the desired time delay will display the selected option in the **AC Loss Delay Timer** text block.

FIGURE 5-27: AC Loss Delay Timer Options for the 411UDAC



To program the **Auto Silence** option, click the down arrow to the right of the **Auto Silence** text block to see the available options as illustrated in Figure 5-28.

FIGURE 5-28:411UDAC Auto Silence Options



The **NAC Coding** option is located at the bottom left of the Input/Output programming window. Use the arrow at the right of the text block in Figure 5-29 to display the available options. .

FIGURE 5-29:411UDAC NAC Coding

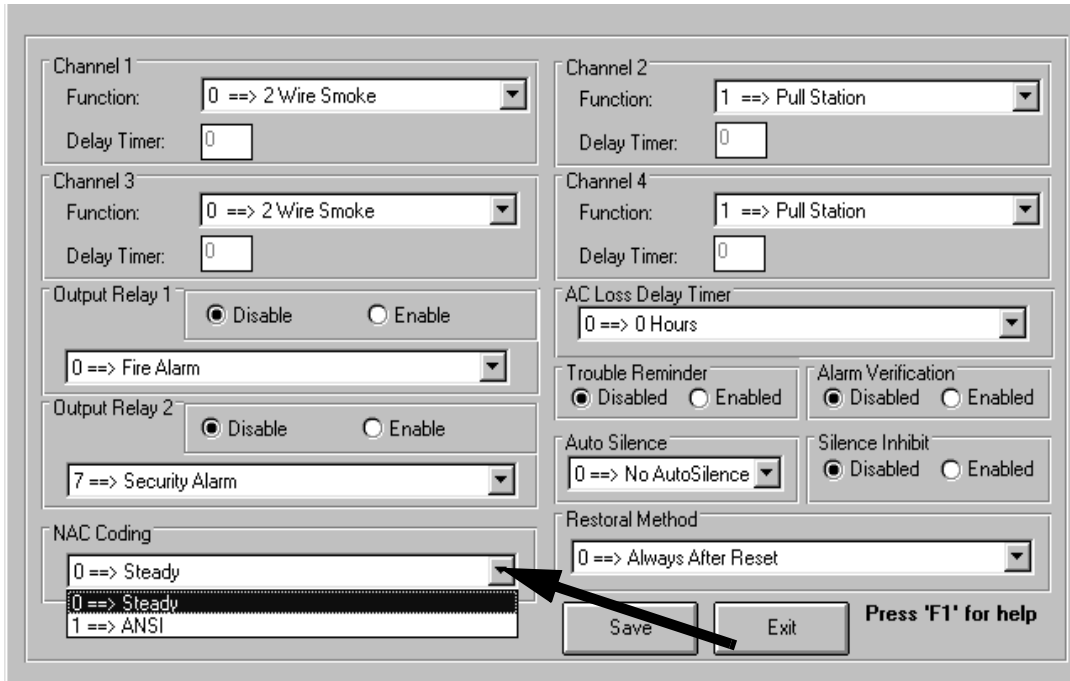
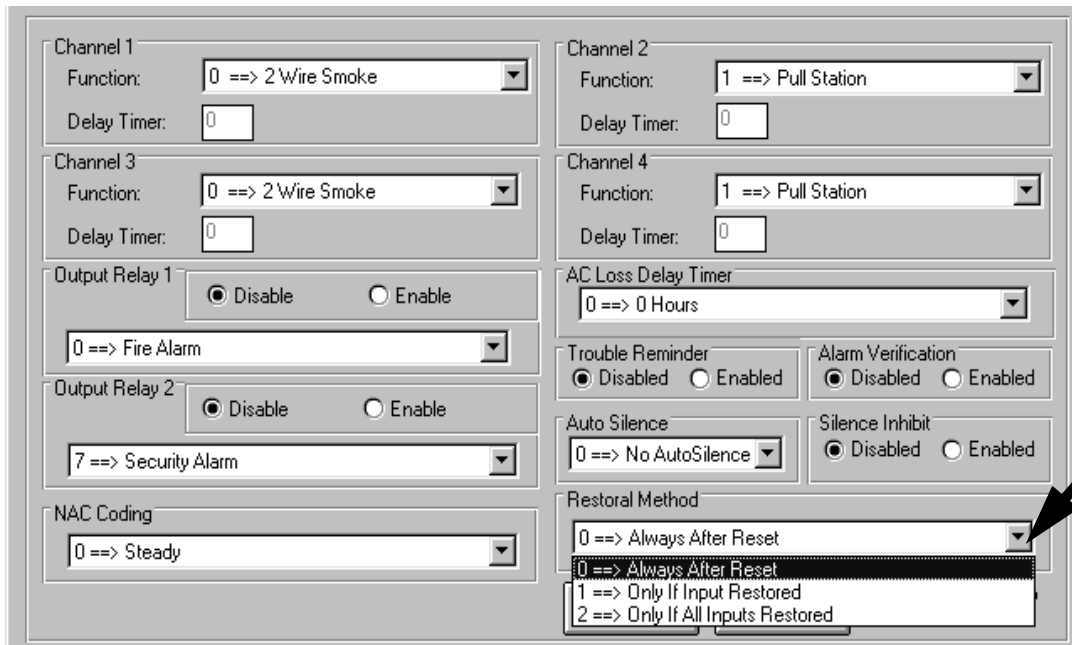


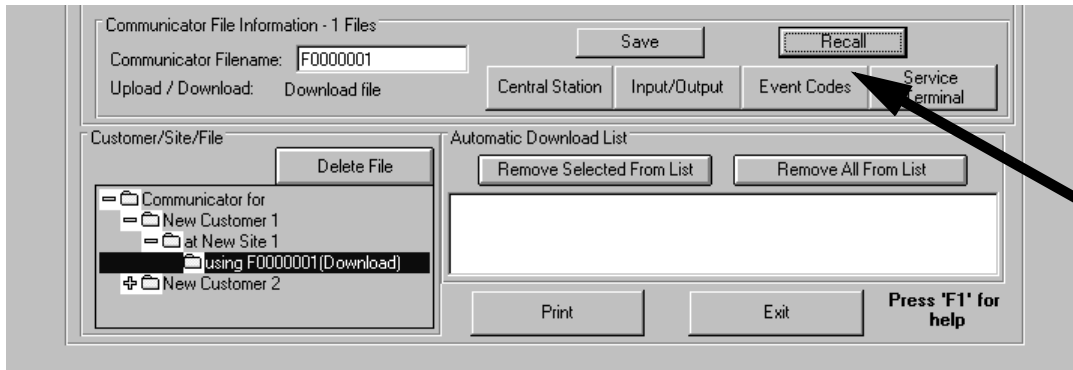
FIGURE 5-30:411UDAC Restoral Method Option



The **Restoral Method** text block is located to the right of the **NAC Coding** option. Click the down arrow in Figure 5-30 to display the options available. Choose the entry that indicates when the restored messages will be sent to the Central Station once the channel has been restored.

5.1.5.4 Event Code Programming

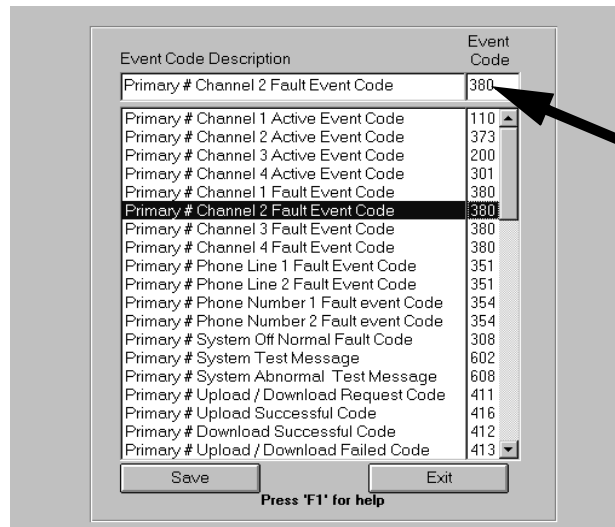
FIGURE 5-31:Customer Files Window - Event Codes



Event Code programming is used to customize messages that will be sent to the Central Station. Selecting a Communication Format will automatically program the Event Codes. Refer to Figure 5-14, “Communications Format,” on page 32.

The Event Code messages can, however, be changed. Click the **Event Codes** button to display the window shown in Figure 5-32.

FIGURE 5-32:Event Code Programming



A list of the Event Code Descriptions and Settings are displayed in this window. Use the scroll bar to the right of the window to view additional entries. To customize a message, click the line with the Setting to be changed. The selected line will appear in the text block at the top of the window. Only the Setting number can be changed. Double click the Setting number in the text block as indicated by the arrow in Figure 5-32. Type in the new Setting number and then click the next line to be changed. The new Setting number for the first changed line will appear in the list of Event Code Descriptions. Repeat this procedure for each Event Code Settings to be changed.

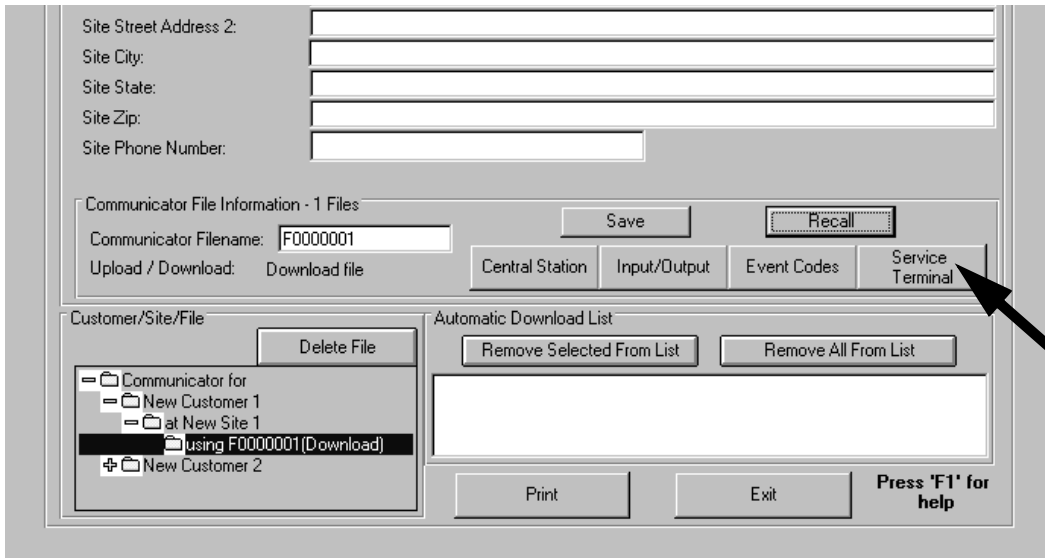
If multiple Settings are to be altered, the keyboard can be used to make the changes. Use the keyboard Up and Down arrow keys to select and highlight the Event Code Setting to be changed. The highlighted selection will appear in the text block at the top of the window. Press the keyboard ENTER key to highlight the Setting Number in the text block. Type the new Setting number and press the ENTER key. The new Setting number will appear in the Event Code list. Use the arrow keys to highlight the next Setting number to be altered and follow the same procedure to change additional Settings.

Note that entering '0' in the Setting field will disable the selected message from being sent to the Central Station.

After completing all desired changes, click the **Save** button and then click the **Exit** button to return to the Customer File window shown in Figure 5-33. Clicking the **Exit** button before the **Save** button will return the program to the Customer File window without saving the entries made in the Event Codes window.

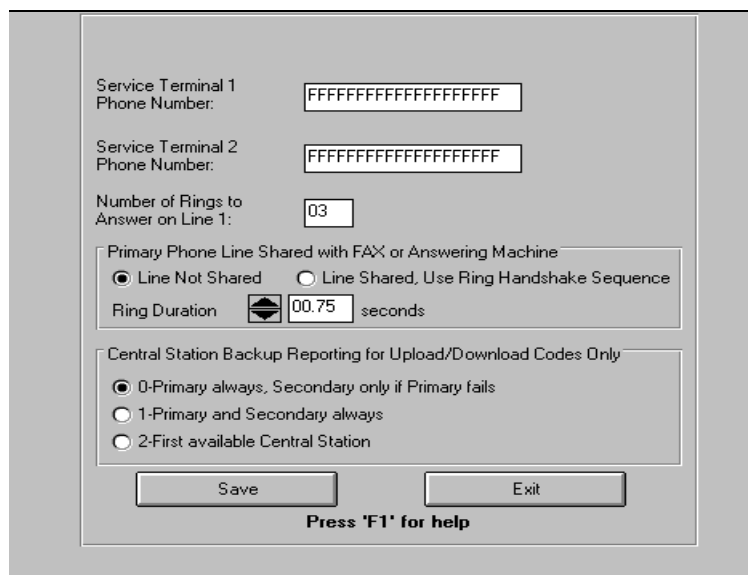
5.1.5.5 Service Terminal Programming

FIGURE 5-33:Customer Files Window - Service Terminal



The Service Terminal window is used to program the service terminal (PC) phone line information. Click the **Service Terminal** button to display the window shown in Figure 5-34.

FIGURE 5-34:Service Terminal Programming



The Service Terminal phone numbers are the numbers the 411UD/411UDAC digital communicator uses to contact the service terminal (PC). Click in the far left of the **Service Terminal 1 Phone Number** text block. The cursor should appear to the left of the first 'F' in the text block. Type the appropriate phone number. Each typed digit will

replace an 'F' in the text block. When the entire phone number has been entered, any remaining 'Fs' indicate the end of the number. Follow the same procedure for entering the **Service Terminal 2 Phone Number**.

The quantity of rings required, before the digital communicator answers an incoming call on phone line #1, can be set in this window. The factory default value is '3' rings. Valid entries are '0' to '25', where '0' tells the digital communicator not to answer the incoming call. Double-click in the text block labeled **Number of Rings to Answer on Line 1** and type the desired number. Entering a quantity greater than 25 will cause an error popup window to appear when attempting to save the window.

The PK-411UD software must indicate whether or not the digital communicator primary phone line is being shared with a FAX or answering machine. If the primary phone line is shared, click the **Line Shared Use Ring Handshake Sequence** text. A black dot will appear in the white circle preceding this text to indicate selection. This option will cause the digital communicator to wait for three consecutive calls, consisting of one ring each and spaced 30 seconds apart, before answering the incoming call. This prevents the device sharing the phone line from answering the call.

The field labeled **Ring Duration** is valid only if the primary phone line is shared with a FAX or answering machine. The time in the adjacent box refers to the amount of time it takes for the 411UD/411UDAC to receive a ring from the service terminal. This time takes into account delays in the PC, modem, telephone network and PBX if used. The default time is 0.75 seconds, however, the time may be adjusted by clicking the up or down arrow or by double clicking in the text block and typing the desired ring duration time.

If the primary phone line is not shared with any other device, click the **Line Not Shared** text. A black dot will appear in the white circle preceding this text to indicate selection. When this selection is made, the digital communicator will answer the incoming call after the designated number of rings have occurred.

The final option to be programmed in this window is the Central Station Backup Reporting for Upload/Download Codes Only. Available options include:

- 0 - Primary always, secondary only if primary fails
- 1 - Primary and secondary always
- 2 - First available Central Station

Click the text of the desired option. A black dot will appear in the white circle preceding the text to indicate selection.

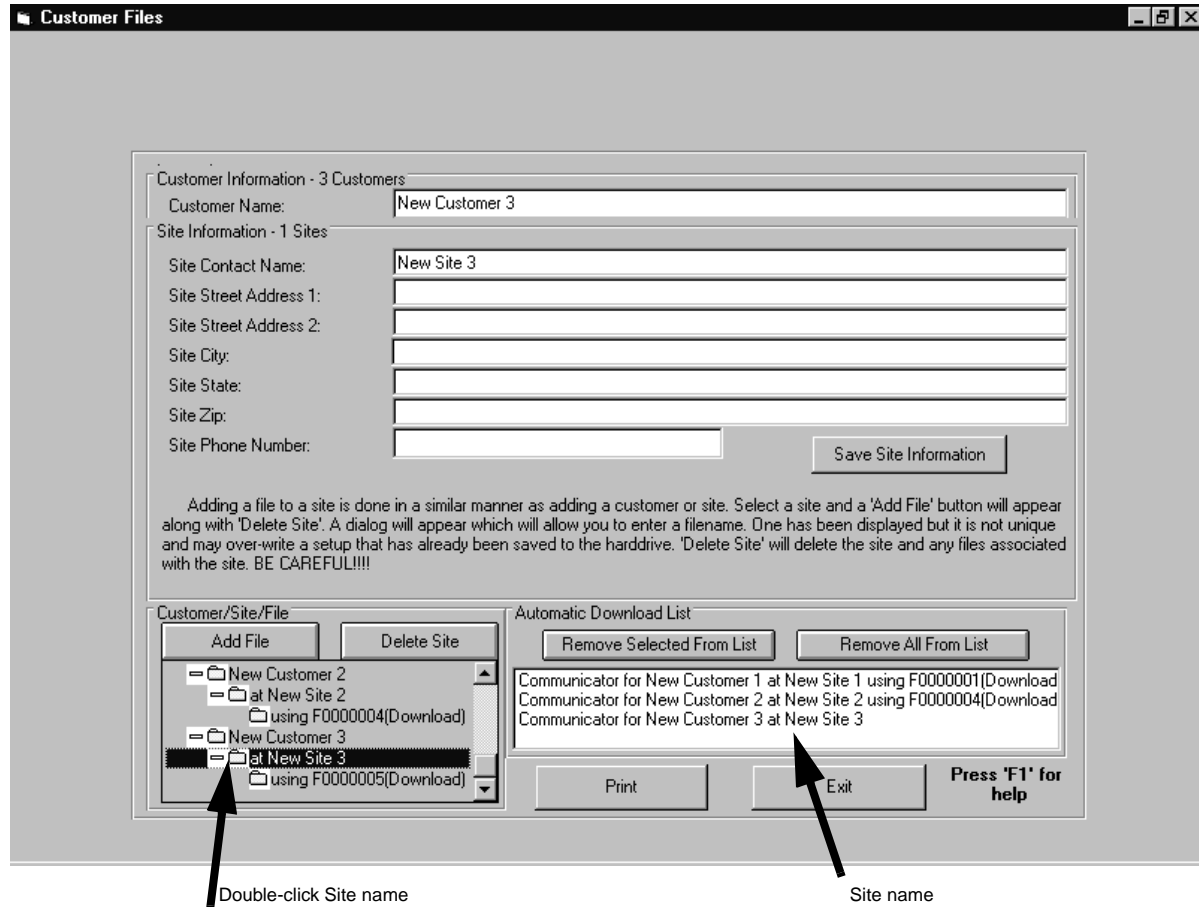
Click the **Save** button to save all selections to the program file. Click the **Exit** button to return to the Customer File window. Clicking the **Exit** button before the **Save** button will exit this window and return to the Customer File window without saving the changes.

The programming for this particular file has been completed. Additional customer files can be programmed by repeating this process. Click the **Save** button to save all program information to the customer file.

5.1.6 Automatic Download List

An Automatic Download feature has been incorporated into the software. Compiling a list of digital communicator program files and sites, will allow the Service Terminal to automatically download programs to the designated sites. The list will appear in the **Automatic Download List** window as illustrated in Figure 5-35.

FIGURE 5-35:Automatic Download

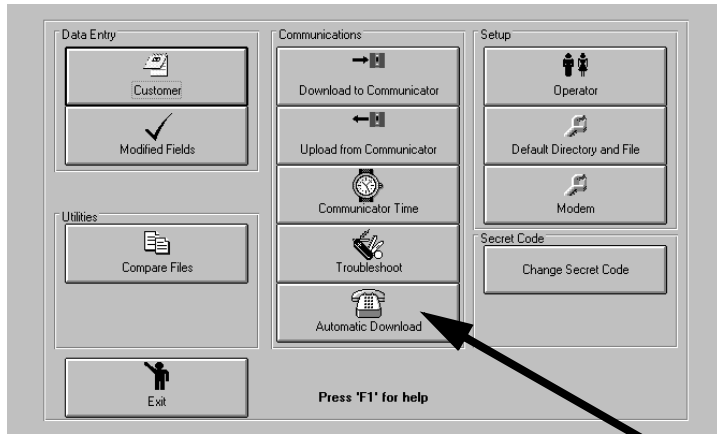


To create the download list, the following steps must be performed:

1. Double-click the first Program File to be downloaded to a digital communicator - the program filename and site name will appear in the Automatic Download List window
2. If the same program file is to be sent to one or more additional sites, double-click the site name(s) - the site name(s) will appear in the Automatic Download List window
3. Double-click the next program filename to be downloaded - the program filename and site name will appear in the Automatic Download List window
4. If the same program file is to be sent to one or more additional sites, double-click the site name(s) - the site name(s) will appear in the Automatic Download List window
5. Continue the preceding steps for all additional program files and sites

The **Remove All From List** button can be clicked to delete all entries from the Automatic Download List window. Individual entries can be removed from the list by clicking the desired entry and then clicking the **Remove Selected From List** button. Clicking the **Exit** button will retain the list entries and return to the main menu. Note that the Main Menu **Automatic Download** button will be enabled since entries have been made into the Automatic Download list window. See “Automatic Download” on page 53 for a description of this feature.

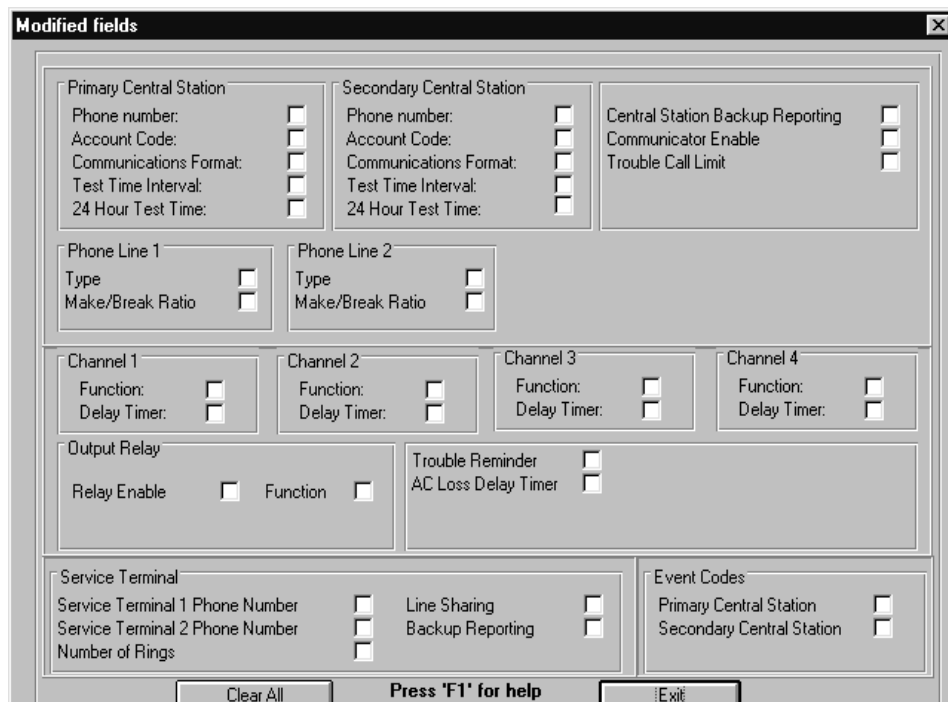
FIGURE 5-36:Main Menu - Automatic Download



5.2 Modified Fields

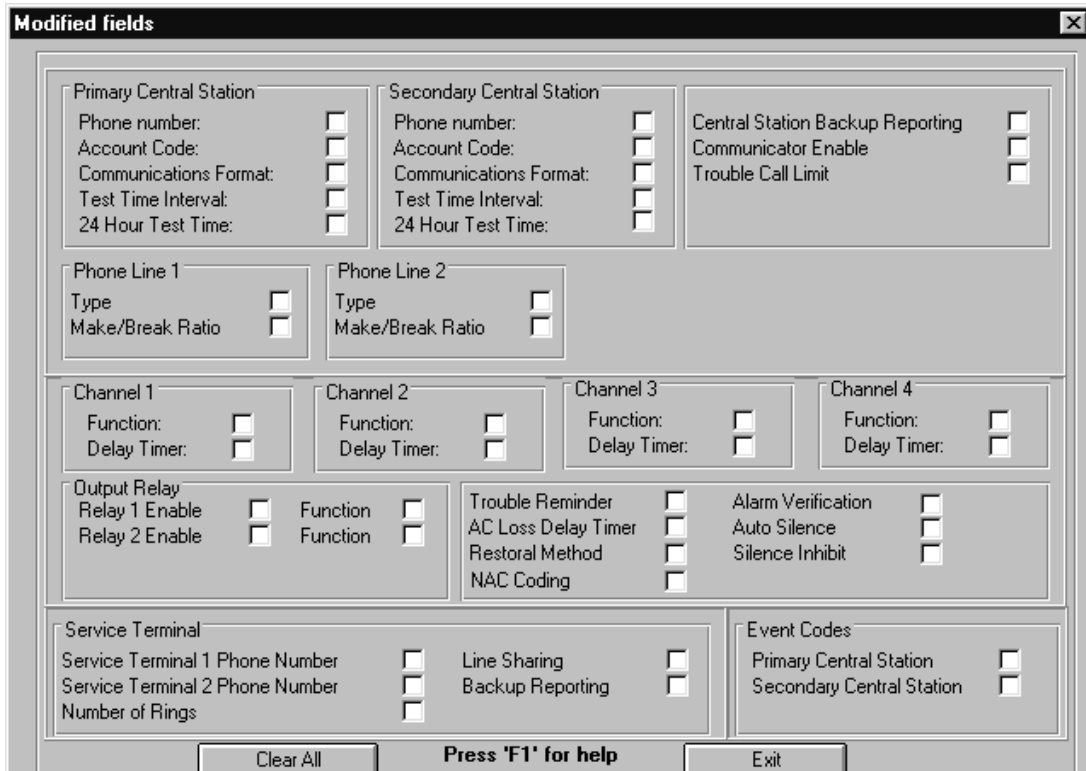
The Modified Fields feature allows the programmer to view the changes which have been made in an upload or download program file. If a download file has been created using either the factory default program file or an existing program file or if data has been uploaded from a communicator, the Modified Fields window will display the areas of the original program which have been changed. Clicking the **Modified Fields** button in the Main Menu will display a window similar to the one shown in Figure 5-37 for the 411UD and Figure 5-38 for the 411UDAC.

FIGURE 5-37:411UD Modified Fields



The Modified Fields window is used to illustrate the changes which have been made to the current program file. A check mark will appear next to each program item which has been changed from the previous program file. The **Clear/Select All** button has no effect on the actual changes which have occurred in the program file. The button may be used to clear all check marks from the window as program modifications are in progress. This will allow the programmer to view the changes after each program alteration.

FIGURE 5-38:411UDAC Modified Fields



Click the **Exit** button to return to the Main Menu.

CHAPTER 6 *Communications*

The Communications features are used to transfer data between the digital communicator and the Service Terminal (PC). The data which can be transferred includes program files, digital communicator time and troubleshoot information.

6.1 Download to Communicator

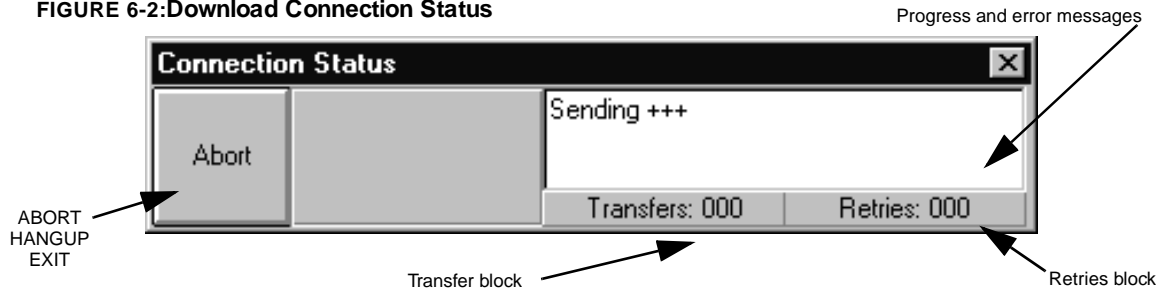
The Download to Communicator feature allows a user, with Level 0 or Level 1 access, to download program files, via telephone lines, from the Service Terminal (PC) to the digital communicator. Before proceeding with the download operation, make sure the correct program file has been specified in the Customer section by viewing the **Communicator Filename** text block in the **Customer** window. Information such as the secret code and site telephone numbers must agree between the selected file and the digital communicator. Refer to Figure 5-9, "Customer Files Window - Central Station," on page 29. Click the **Download to Communicator** button to display the window shown in Figure 6-1. Clicking the **OK** button, with **Disable Callback** selected, will commence the download process.

FIGURE 6-1: Downloading



The callback option requires the digital communicator to call the Service Terminal (PC) before the download begins. Click the **Callback Service Terminal 1** text to have the communicator call the PC on phone line #1. A black dot will appear in the white circle preceding the text to indicate selection of this option. Click the **Callback Service Terminal 2** text to have the communicator call the PC on phone line #2. A black dot will appear in the white circle preceding the text to indicate selection of this option. Click the **OK** button to commence the download sequence. The window illustrated in Figure 6-2 will be displayed, indicating the progress of the download process.

FIGURE 6-2: Download Connection Status



Note that the Connection Status window illustrated in Figure 6-2, may at times be positioned behind another window, preventing access to the Abort/Hangup/Exit button. To position the window to the front, press and hold the Control (Ctrl) key and press the 'P' key on the keyboard.

6.1.1 Download with Callback Enabled

Downloads can be performed with or without callback. The following message sequence displays at the service terminal for a download with callback enabled:

1. Initializing strings sent to modem
2. Sending ATDT @ xxx (where xxx is communicator phone number)
3. Waiting for modem to connect
4. Verify Secret Code (attempt 1)
5. Secret Code Verification Complete
6. Request callback to phone zzz (where zzz is the Service Terminal phone number)
7. Communicator calls Central Station
8. Waiting for callback from communicator
9. Answering phone
10. Connecting with communicator
11. Verify Secret Code (attempt 1)
12. Requesting ID from communicator
13. Received communicator ID
14. Requesting download to communicator
15. Packet received by communicator
16. Communicator calls Central Station

When the *Packet Received by Communicator* message is displayed, downloading is complete and a new option may be selected. Communication will terminate if the user clicks on 'Hangup' or 'Exit' or if the communicator terminates communication.

6.1.2 Download with Callback Disabled

The following message sequence displays at the service terminal for a download with callback disabled:

1. Initializing strings sent to modem
2. Sending ATDT @ xxx (where xxx is communicator phone number)
3. Waiting for modem to connect
4. Verify Secret Code (attempt 1)
5. Secret Code Verification Complete
6. Requesting Disable Callback
7. Requesting ID from communicator
8. Received communicator ID
9. Requesting download to communicator
10. Packet received by communicator
11. Communicator calls Central Station

Note that the label on the button to the left in Figure 6-2 will change as the status of the modem changes. While the software is attempting to connect to the modem, the button will be labeled **Abort**. Clicking the **Abort** button will terminate the connection attempt. The button label will change to **Exit** if the **Abort** button is clicked or if attempts to connect to the modem fail. Clicking the **Exit** button will close the Connection Status window and return to the previous window. The button label will change to **Hangup** after communication with the digital communicator has been established. Clicking the **Hangup** button will terminate the call.

A successful transfer process will be indicated by the incrementation of the number in the **Transfers** block. If initial attempts to download are unsuccessful, the **Retries** block will indicate the number of failed attempts. The progress of the download and any errors which may occur before or during the download process will be displayed in the window above the **Transfers** and **Retries** blocks. To interrupt the download process at any time, click the **Abort** button.

6.2 Upload from Communicator

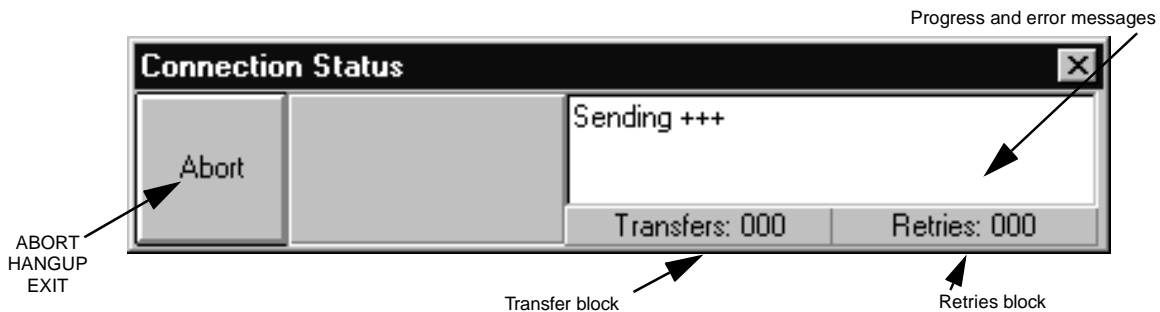
The Upload from Communicator feature allows the uploading of program files, via telephone lines, from the digital communicator to the Service Terminal (PC). Before proceeding with the upload operation, make sure the correct program file for the specific site has been specified in the Customer section by viewing the **Communicator Filename** text block in the **Customer** window. Information such as the secret code and site telephone numbers must agree between the selected file and the digital communicator. Refer to Figure 5-9, "Customer Files Window - Central Station," on page 29. Click the **Upload from Communicator** button to display the window shown in Figure 6-3. Clicking the **OK** button, with **Disable Callback** selected, will commence the upload process.

FIGURE 6-3:Uploading



The callback option requires the digital communicator to call the Service Terminal (PC) before the upload begins. Click the **Callback Service Terminal 1** text to have the communicator call the PC on phone line #1. A black dot will appear in the white circle preceding the text to indicate selection of this option. Click the **Callback Service Terminal 2** text to have the communicator call the PC on phone line #2. A black dot will appear in the white circle preceding the text to indicate selection of this option. Click the **OK** button to commence the upload sequence. The window illustrated in Figure 6-4 will be displayed, indicating the progress of the upload process.

FIGURE 6-4:Upload Connection Status



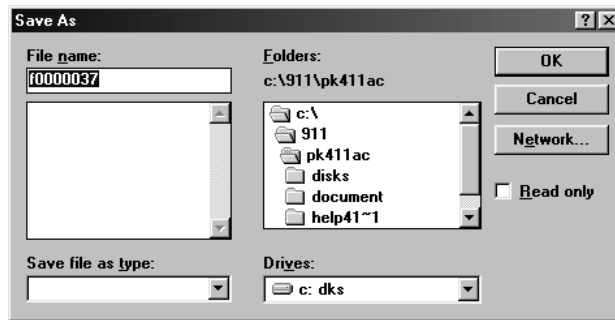
Note that the label on the button to the left will change as the status of the modem changes. While the software is attempting to connect to the modem, the button will be labeled **Abort**. Clicking the **Abort** button will terminate the connection attempt. The button label will change to **Exit** if the **Abort** button is clicked or if attempts to connect to the modem fail. Clicking the **Exit** button will close the Connection Status window and return to the previous window. The button label will change to **Hangup** after communication with the digital communicator has been established. Clicking the **Hangup** button will terminate the call.

Note that the Connection Status window illustrated in Figure 6-4, may at times be positioned behind another window, preventing access to the **Abort/Hangup/Exit** button. To position the window to the front, press and hold the Control (**Ctrl**) key and press the **P** key on the keyboard.

A successful transfer process will be indicated by the incrementation of the number in the **Transfers** block. If initial attempts to upload are unsuccessful, the **Retries** block will indicate the number of failed attempts. The progress of the upload and any errors which may occur before or during the upload process will be displayed in the window above the **Transfers** and **Retries** blocks. To interrupt the upload process at any time, click the **Abort** button.

When the **Transfers** block stops incrementing, uploading has been successfully completed. Note that the uploaded file must be saved by selecting **Customer** from the Main Menu and clicking the **Save** button. The window shown in Figure 6-5 will be displayed. The default filename may be used or a new filename can be entered by clicking in the text block and typing up to eight characters. When OK is clicked, the Upload file will be saved using the selected filename and a **.ul1** extension.

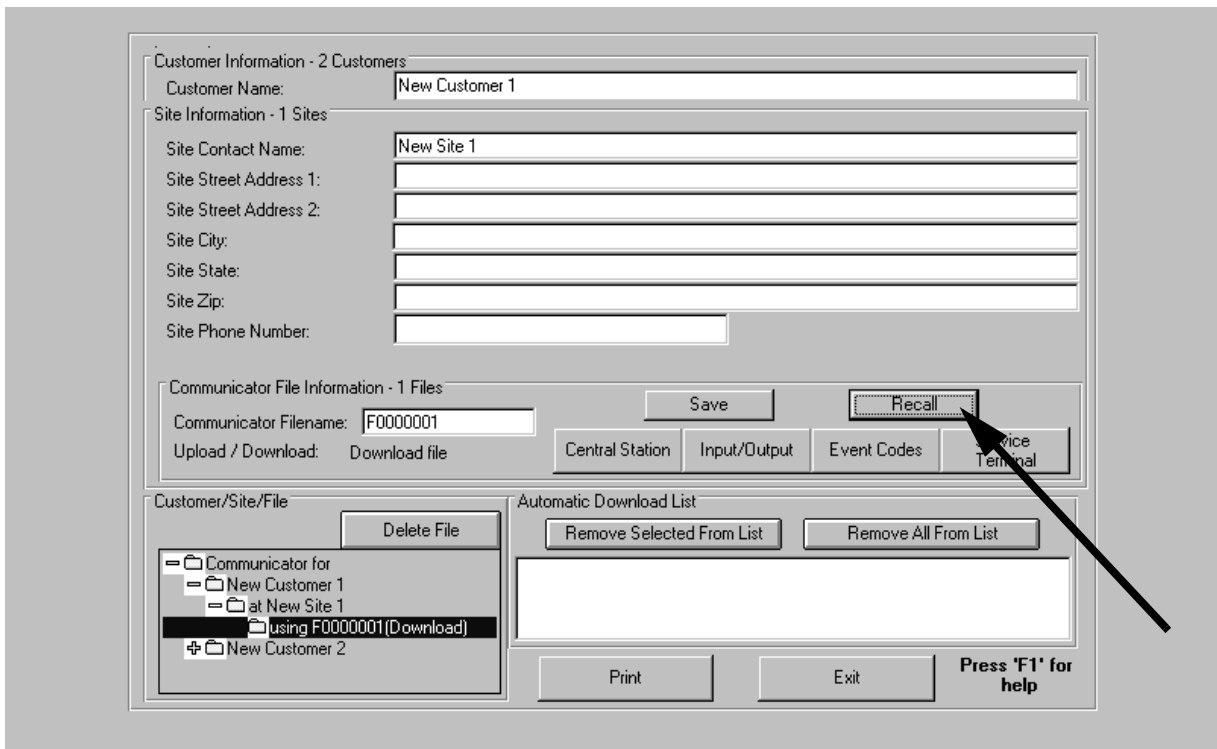
FIGURE 6-5:Upload Filename



6.2.1 Converting an Upload File to a Download File

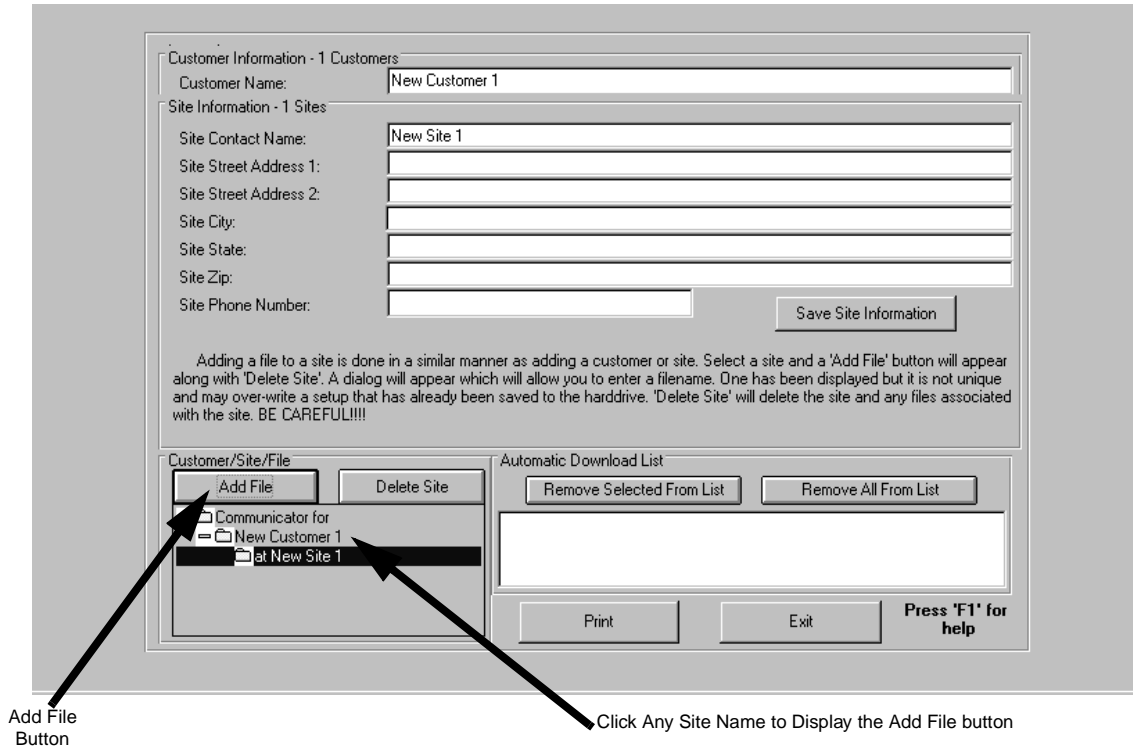
An Upload program file can be converted to a Download program file by selecting **Customer** in the Main Menu. The Customer window shown in Figure 6-6 will be displayed.

FIGURE 6-6:Customer Window - Recall File



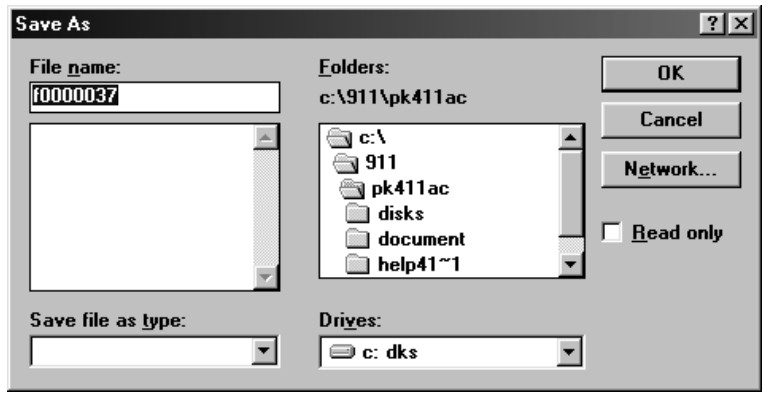
Type the filename of the Upload file that is to be converted to a Download file in the **Communicator Filename** text block and then click the **Recall** button. The program file will be recalled into the service terminal memory. Click any Site name in the **Customer/Site/File** text block to display the window shown in Figure 6-7.

FIGURE 6-7:Customer Site Information



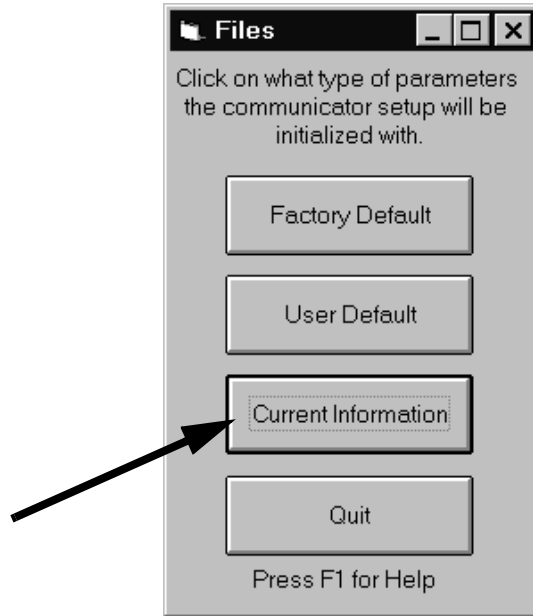
Clicking the **Add File** button will display the Filename window shown in Figure 6-8. Use the default name indicated in the text block or click in the text block and type a different filename to be used for the new Download file which is being converted from an Upload file.

FIGURE 6-8:Filename Selection



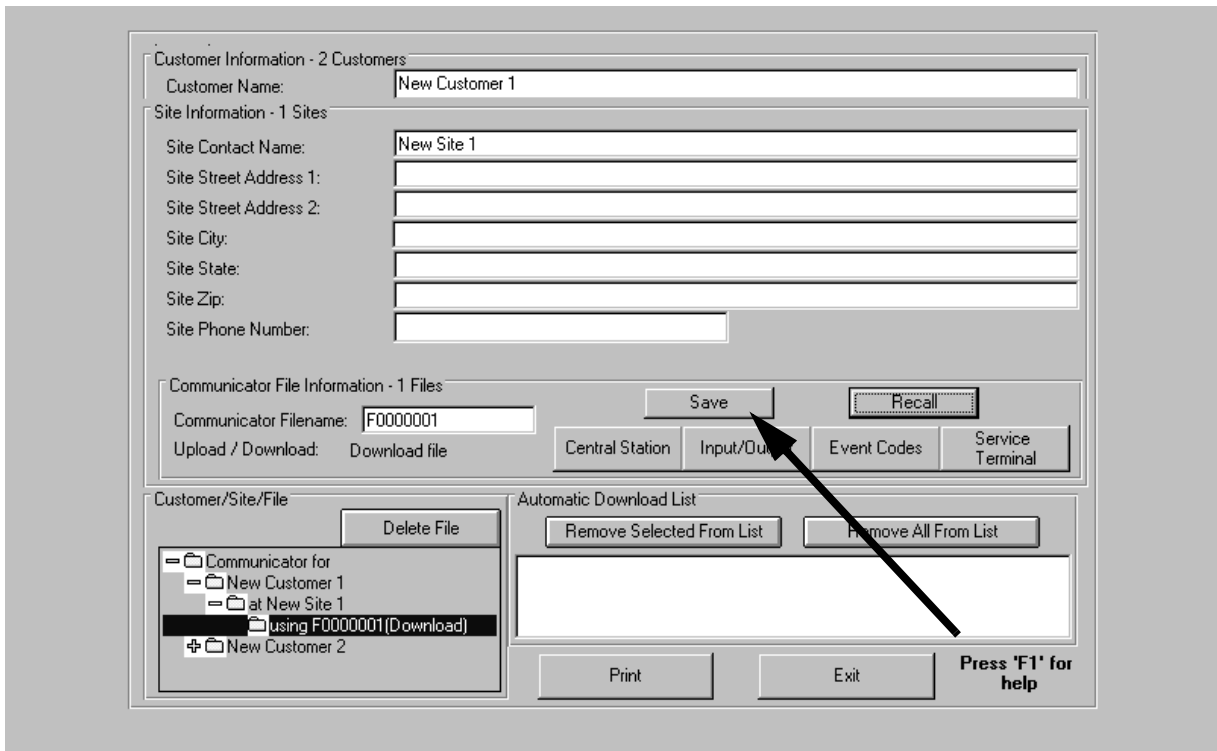
After the filename has been selected, clicking the **OK** button will display the window shown in Figure 6-9.

FIGURE 6-9:Current Information Selection



Click the **Current Information** button to create a Download file using the new filename and containing the Upload program file information. Click the **Save** button in the Customer window shown in Figure 6-10, to save the newly created Download file. The Download file may now be modified and used to program a 411UD/411UDAC.

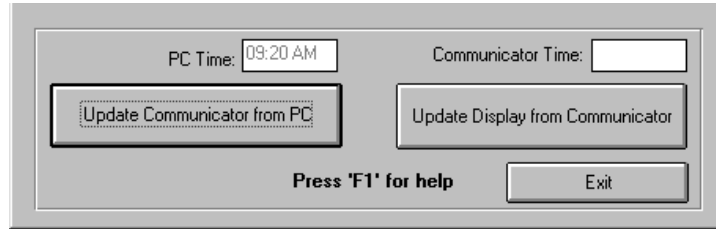
FIGURE 6-10:Customer Window - Recall File



6.3 Communicator Time

The Communicator Time feature allows the Service Terminal (PC) to retrieve the digital communicator time in order to check it for accuracy. The Service Terminal can also download the PC time to the digital communicator. Click the **Communicator Time** button in the Main Menu to access the window illustrated in Figure 6-11.

FIGURE 6-11:Communicator Time



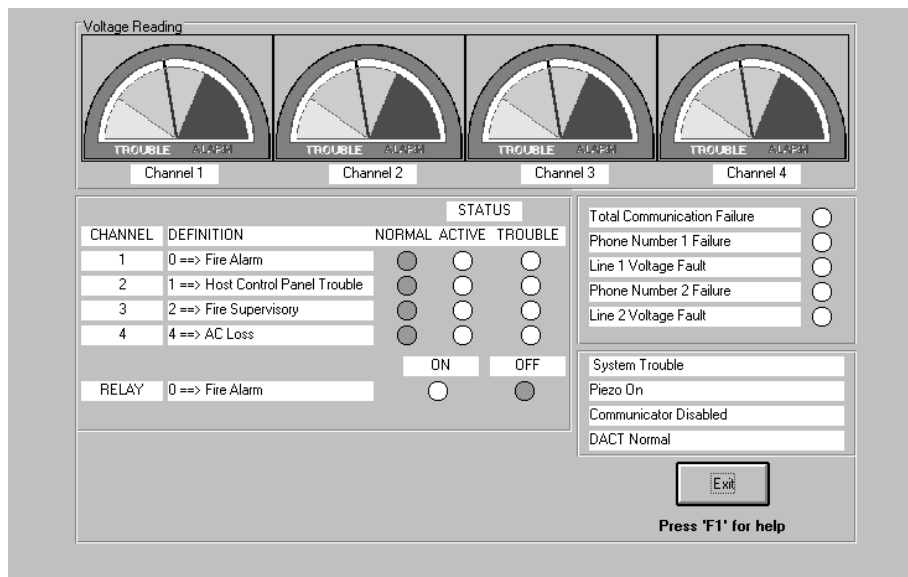
The Service Terminal (PC) time is displayed in the text block to the left of this window. To download this time to the digital communicator, click the **Update Communicator from PC** button. The process to download the time will be initiated. Follow the procedure described in the section titled “Download to Communicator” on page 46.

The digital communicator time can be retrieved and displayed in the text block labeled **Communicator Time** to the right of this window. To upload the time from the digital communicator, click the **Update Display from Communicator** button. The process to upload the time will be initiated. Follow the procedure described in the section titled “Upload from Communicator” on page 48.

6.4 Troubleshoot

The Troubleshoot feature allows the user to remotely view the status of the digital communicator. Clicking the Troubleshoot button in the Main Menu will initiate an upload process. Follow the procedure described in the section titled “Upload from Communicator” on page 48. The window shown in Figure 6-12 will be displayed for the 411UD and the window shown in Figure 6-13, for the 411UDAC.

FIGURE 6-12:Troubleshoot Window for the 411UD



The status of each of the four input channels is shown at the top of the window. A pointer in the yellow trouble sector, green normal sector or red alarm sector of the meter indicates the real-time status of each channel.

A listing of each input channel and output relay function definition, as presently programmed in the digital communicator, is displayed in the lower left portion of the window. The 'LEDs' located in the center of the window represent the status of each channel and relay. These 'LEDs' indicate Normal, Active or Trouble status for each Channel.

Four system status and piezo status blocks are located in the lower right corner of the window. The top block indicates 'System Normal' or 'System Trouble'. The second block indicates 'Piezo Off', 'Piezo On' or 'Piezo Silence'. The third block indicates 'Communicator Enabled' or 'Communicator Disabled'. The fourth block indicates 'DACT Normal' or 'DACT Off Normal'.

Note that the Connection Status window, which appears while the Troubleshoot information is being uploaded (refer to Figure 6-4), may be positioned behind the Troubleshoot window, preventing access to the **Abort/Hangup/Exit** button. To position the window in front, press and hold the Control (**Ctrl**) key and press the **P** key on the keyboard.

Click the **Exit** button to return to the Main Menu window.

FIGURE 6-13: Troubleshoot Window for the 411UDAC

The screenshot shows the Troubleshoot Window for the 411UDAC. It is divided into several sections:

- Input Status:** Four gauges labeled 'TROUBLE' and 'ALARM'. Below them are labels: '0 ==> 2 Wire Smoke', '1 ==> Pull Station', '0 ==> 2 Wire Smoke', and '1 ==> Pull Station'.
- Voltage Readings:**

AC Voltage	117.6	NAC Voltage	1.00
Battery Voltage	13.95	12 Volt Resetable	12.60
- RELAY Table:**

RELAY		Active	Not Active
1	0 ==> Fire Alarm	<input type="radio"/>	<input checked="" type="radio"/>
2	7 ==> Security Alarm	<input type="radio"/>	<input checked="" type="radio"/>
- System Status Indicators:**
 - System Normal
 - Piezo Off
 - Communicator Enabled
 - DACT Normal Mode
 - AC Normal
 - Battery Normal
 - NAC Off
- Failure Indicators:**
 - Total Communication Failure
 - Phone Number 1 Failure
 - Phone Number 2 Failure
 - Line 1 Voltage Fault
 - Line 2 Voltage Fault
 - NAC Fault
 - Ground Fault
- Buttons:** 'Exit' and 'Press 'F1' for help'.

6.5 Automatic Download

The Automatic Download feature allows the user to download a program file or series of files to one or more digital communicator sites. The program file and site list created in the Customer window is used as a guide for the automatic download procedure. Refer to Figure 5-35, "Automatic Download," on page 43. Click the Automatic Download button to begin this process. If a 411UD is selected, the window shown in Figure 6-14 will be displayed. If an 411UDAC is selected, the window shown in Figure 6-15 will be displayed.

The Automatic Download Window is used to select the specific program fields to be reprogrammed during the automatic download operation, initiate the download operation and view a log which lists the results of each download. Specific program field verification refers to the feature which allows the Service Terminal (PC) program to compare its download program with the current digital communicator program before the communicator is reprogrammed. From one to all fields can be verified but only the program fields without check marks will be verified. If the programming of any unchecked field in the download program does not match the programming in the same field in the digital communicator program, the download operation will be terminated.

FIGURE 6-14:Automatic Download Window for the 411UD

Primary Central Station Phone number: <input type="checkbox"/> Account Code: <input type="checkbox"/> Communications Format: <input type="checkbox"/> Test Time Interval: <input type="checkbox"/> 24 Hour Test Time: <input type="checkbox"/>		Secondary Central Station Phone number: <input type="checkbox"/> Account Code: <input type="checkbox"/> Communications Format: <input type="checkbox"/> Test Time Interval: <input type="checkbox"/> 24 Hour Test Time: <input type="checkbox"/>		Central Station Backup Reporting <input type="checkbox"/> Communicator Enable <input type="checkbox"/> Trouble Call Limit <input type="checkbox"/>	
Phone Line 1 Type <input type="checkbox"/> Make/Break Ratio <input type="checkbox"/>		Phone Line 2 Type <input type="checkbox"/> Make/Break Ratio <input type="checkbox"/>			
Channel 1 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>		Channel 2 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>		Channel 3 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>	
Channel 4 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>					
Output Relay Relay 1 Enable <input type="checkbox"/> Function <input type="checkbox"/> Relay 2 Enable <input type="checkbox"/> Function <input type="checkbox"/>				Trouble Reminder <input type="checkbox"/> AC Loss Delay Timer <input type="checkbox"/>	
Service Terminal Service Terminal 1 Phone Number <input type="checkbox"/> Service Terminal 2 Phone Number <input type="checkbox"/> Number of Rings <input type="checkbox"/>				Line Sharing <input type="checkbox"/> Backup Reporting <input type="checkbox"/>	
				Event Codes Primary Central Station <input type="checkbox"/> Secondary Central Station <input type="checkbox"/>	
<input type="button" value="Clear/Select All"/>		<input type="button" value="Start Download"/>		<input type="button" value="View Log"/>	
		<input type="button" value="Exit"/>		Downloading Site 0 of 1	

Press 'F1' for help

It should be noted that, since the Automatic Download feature involves downloading to a series of different digital communicators, an error or interruption during any one download will not prevent the downloading to other panels in the automatic download list. For this reason, it is vitally important that the View Log be checked following the completion of all downloads. The log, which automatically pops-up on completion of the Automatic Download, will list the results of each download operation, including whether or not the download was successful.

FIGURE 6-15:Automatic Download Window for the 411UDAC

Primary Central Station Phone number: <input type="checkbox"/> Account Code: <input type="checkbox"/> Communications Format: <input type="checkbox"/> Test Time Interval: <input type="checkbox"/> 24 Hour Test Time: <input type="checkbox"/>		Secondary Central Station Phone number: <input type="checkbox"/> Account Code: <input type="checkbox"/> Communications Format: <input type="checkbox"/> Test Time Interval: <input type="checkbox"/> 24 Hour Test Time: <input type="checkbox"/>		Central Station Backup Reporting <input type="checkbox"/> Communicator Enable <input type="checkbox"/> Trouble Call Limit <input type="checkbox"/>	
Phone Line 1 Type <input type="checkbox"/> Make/Break Ratio <input type="checkbox"/>		Phone Line 2 Type <input type="checkbox"/> Make/Break Ratio <input type="checkbox"/>			
Channel 1 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>		Channel 2 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>		Channel 3 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>	
Channel 4 Function: <input type="checkbox"/> Delay Timer: <input type="checkbox"/>					
Output Relay Relay 1 Enable <input type="checkbox"/> Function <input type="checkbox"/> Relay 2 Enable <input type="checkbox"/> Function <input type="checkbox"/>				Trouble Reminder <input type="checkbox"/> AC Loss Delay Timer <input type="checkbox"/> Restoral Method <input type="checkbox"/> NAC Coding <input type="checkbox"/>	
				Alarm Verification <input type="checkbox"/> Auto Silence <input type="checkbox"/> Silence Inhibit <input type="checkbox"/>	
Service Terminal Service Terminal 1 Phone Number <input type="checkbox"/> Service Terminal 2 Phone Number <input type="checkbox"/> Number of Rings <input type="checkbox"/>				Line Sharing <input type="checkbox"/> Backup Reporting <input type="checkbox"/>	
				Event Codes Primary Central Station <input type="checkbox"/> Secondary Central Station <input type="checkbox"/>	
<input type="button" value="Clear/Select All"/>		<input type="button" value="Start Download"/>		<input type="button" value="View Log"/>	
		<input type="button" value="Exit"/>		Downloading Site 0 of 1	

Press 'F1' for help

Following are examples of when verification of specific program fields may be employed.

New Digital Communicator Installations or Complete Reprogramming

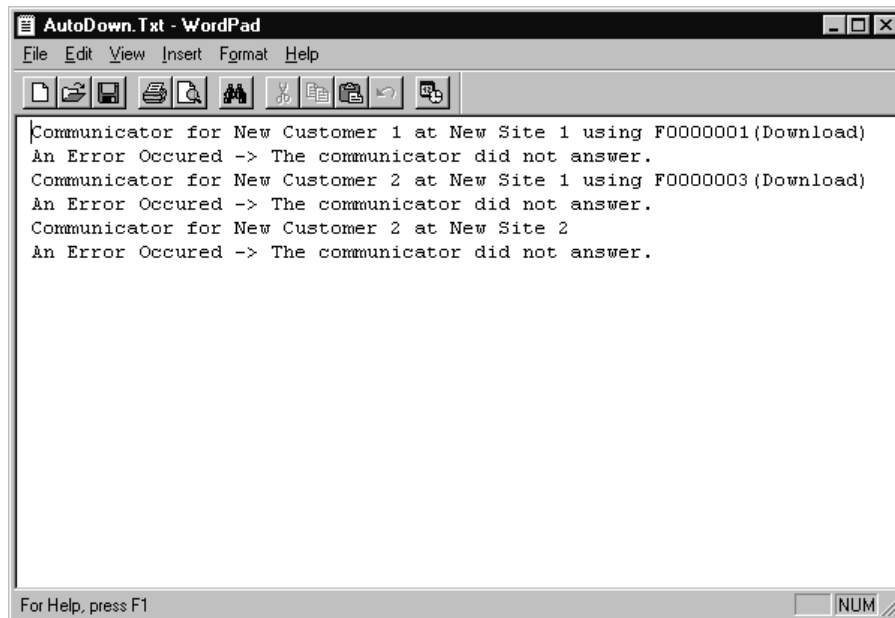
Download Without Specific Field Verification - Automatic Download may be accomplished without verifying any program fields. This option would be used when programming new digital communicators or when changing all of the programming in existing communicators. Since verification is not being employed, make certain check marks appear in all fields in the window shown in Figure 6-14 or Figure 6-15. To set all check marks, click the **Clear/Select All** button. This button will cause the window to toggle between clearing any check marks found in the window, and inserting check marks in all fields of a cleared window. Once check marks appear in all fields, click the **Start Download** button to begin the download operation. See “Download to Communicator” on page 46 for a description of the download operation.

Partial Reprogramming of Existing Digital Communicators

Download With Specific Field Verification - Automatic Download may be accomplished with verification of specific program fields. This option would be used when partially reprogramming existing digital communicators. Place a check mark next to the program field(s) that will be changed by the new program by clicking on the selected field. Refer to Figure 6-14 or Figure 6-15. The **Clear/Select All** button will cause the window to toggle between clearing any check marks found in the window, and inserting check marks in all fields of a cleared window. Once all desired check marks have been inserted, click the **Start Download** button to begin the download operation. See “Download to Communicator” on page 46, for a description of the download operation.

After downloading has been completed, check the **View Log** to confirm that each download has been successfully completed. The window shown in Figure 6-16 will appear.

FIGURE 6-16:View Log

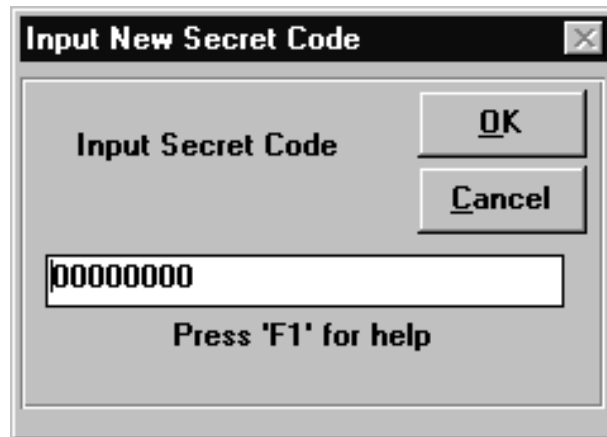


If any file downloads were unsuccessful, a list of errors and failed attempts will be displayed as shown in this example. This window will also indicate all successful downloads.

CHAPTER 7 *Secret Code*

The Secret Code feature provides protection from unauthorized changes to the digital communicator program. The factory default Secret Code for all 411UD/411UDAC digital communicators is '00000000', but each communicator should be customized by the user. The code can only be changed through an initial download to the communicator or by using the Change Secret Code feature. Clicking the **Change Secret Code** button in the Main Menu window will display the window shown in Figure 7-1.

FIGURE 7-1:Secret Code

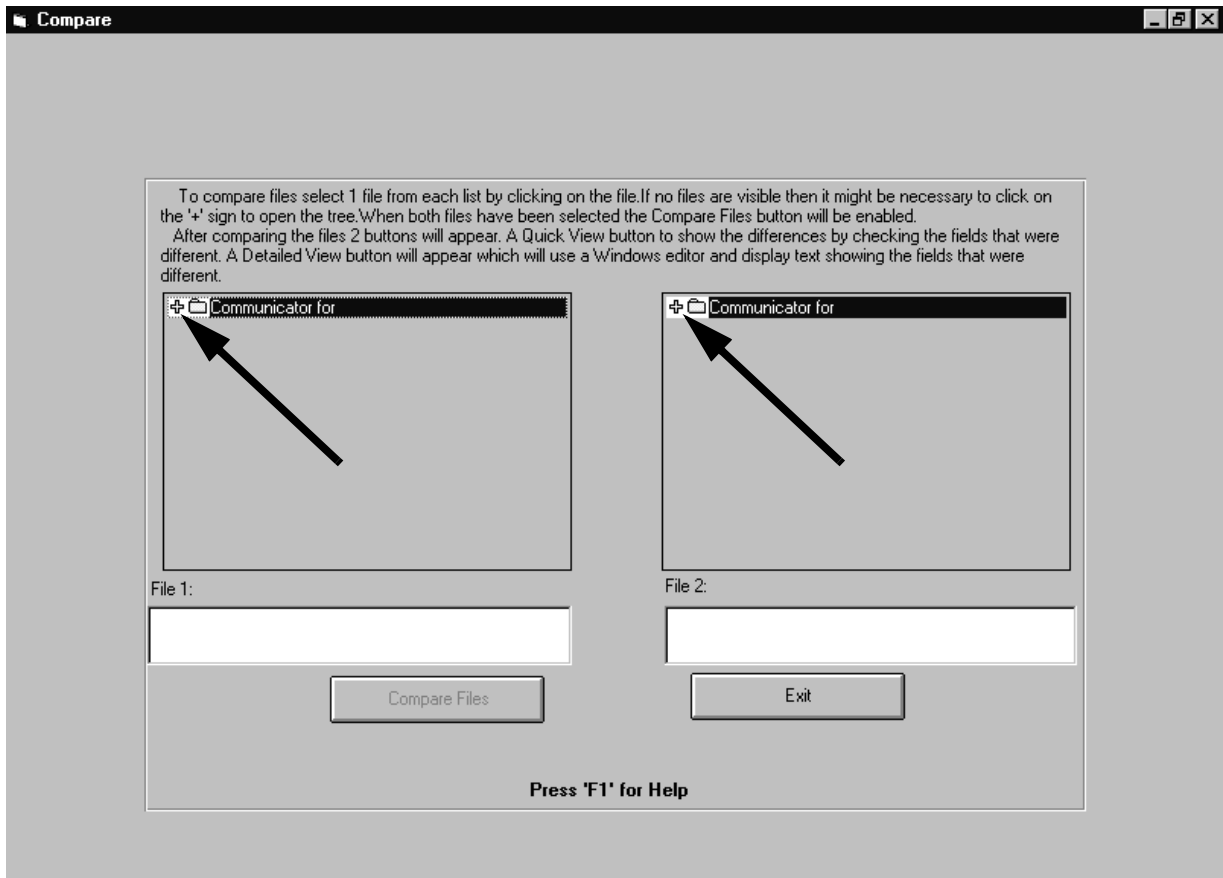


Use this window to change the Secret Code after it has been established by an initial download. Double-click in the white text block and type from 1 to 8 characters for the new secret code. Click the OK button to begin the Secret Code download process. For an explanation of the download process and the windows which will appear, refer to "Download to Communicator" on page 46. Note that only the secret code will be downloaded during this procedure.

CHAPTER 8 *Utilities - Compare*

The Compare feature allows the user to compare the programming of two separate program files, side-by-side. Clicking the **Compare** button in the Main Menu will cause the window shown in Figure 8-1 to appear.

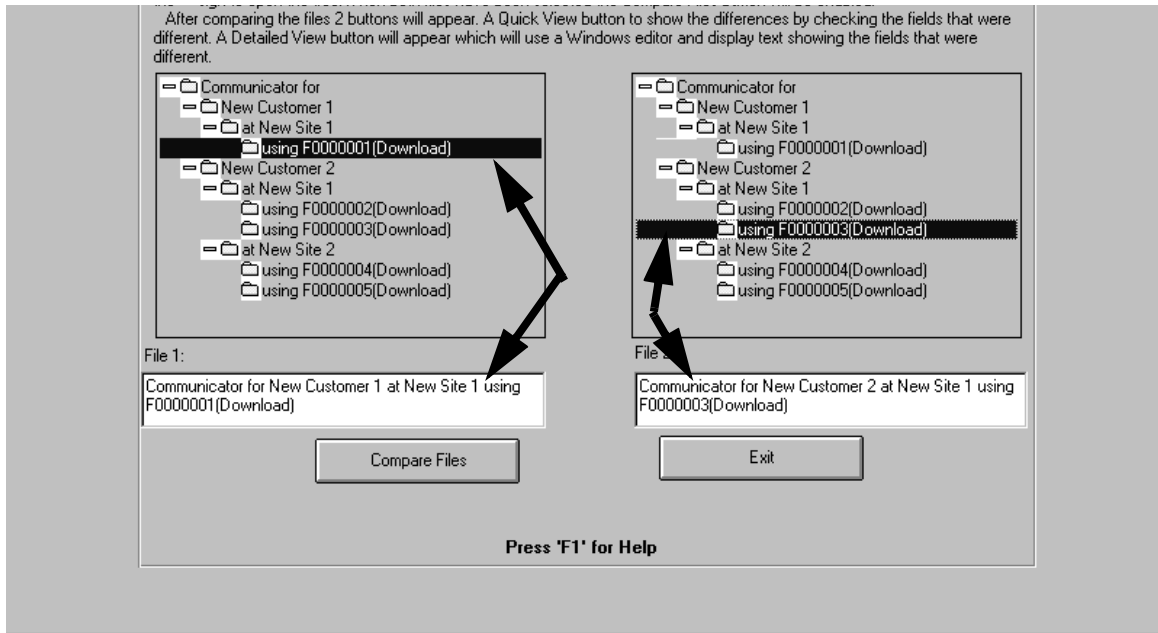
FIGURE 8-1: Compare



Program files, that are available for comparison, can be viewed by clicking the plus (+) signs next to the text **Communicator for** in the two sections of the Compare window. Click all (+) signs until only (-) signs are visible. This will allow the user to view all available files in each section. Click the first file in the left screen to be compared.

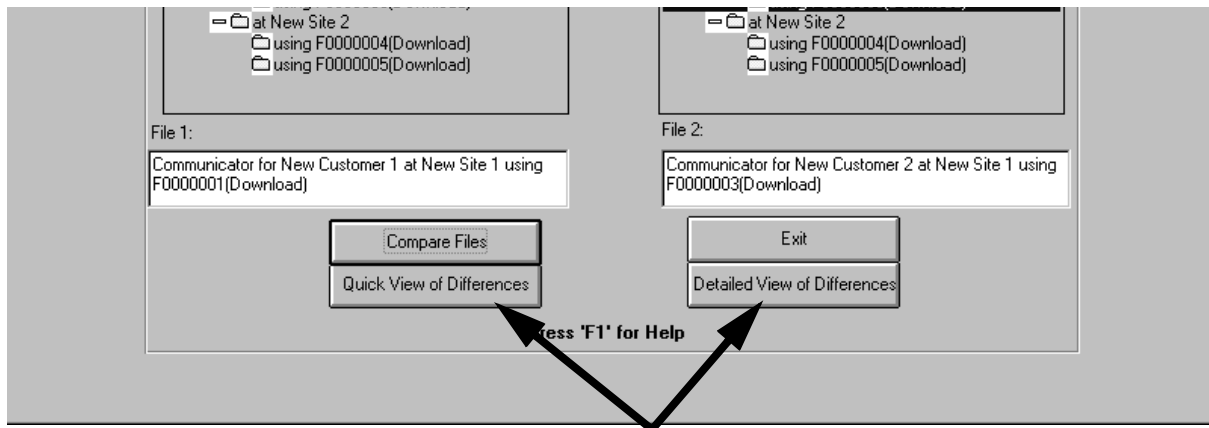
The filename will appear in the text block labeled **File 1**. Click the second file in the right screen to be compared. The filename will appear in the text block labeled **File 2** as shown in Figure 8-2.

FIGURE 8-2: Compare File Selections



Click the **Compare Files** button to begin the compare process. The software will search for the program fields which differ from one file to the next. The window shown in Figure 8-3 will be displayed.

FIGURE 8-3: View Comparison



Two buttons appear which allow viewing of the differences between the two program files.

8.1 Quick View of Differences

Clicking the **Quick View of Differences** button will display the window shown in Figure 8-4.

FIGURE 8-4:Quick View Compare

The screenshot shows a 'Quick View Compare' window with the following sections and fields:

- Primary Central Station:** Phone number, Account Code, Communications Format, Test Time Interval, 24 Hour Test Time.
- Secondary Central Station:** Phone number, Account Code, Communications Format, Test Time Interval, 24 Hour Test Time.
- Central Station Backup Reporting:** Central Station Backup Reporting, Communicator Enable, Trouble Call Limit.
- Phone Line 1:** Type, Make/Break Ratio.
- Phone Line 2:** Type, Make/Break Ratio.
- Channel 1:** Function, Delay Timer.
- Channel 2:** Function, Delay Timer.
- Channel 3:** Function, Delay Timer.
- Channel 4:** Function, Delay Timer.
- Output Relay:** Relay 1 Enable, Relay 2 Enable, Function.
- Alarm Verification:** Alarm Verification, Auto Silence, Silence Inhibit.
- Trouble Reminder:** Trouble Reminder, AC Loss Delay Timer, Restoral Method, NAC Coding.
- Service Terminal:** Service Terminal 1 Phone Number, Service Terminal 2 Phone Number, Number of Rings.
- Event Codes:** Primary Central Station, Secondary Central Station.
- Line Sharing:** Line Sharing, Backup Reporting.

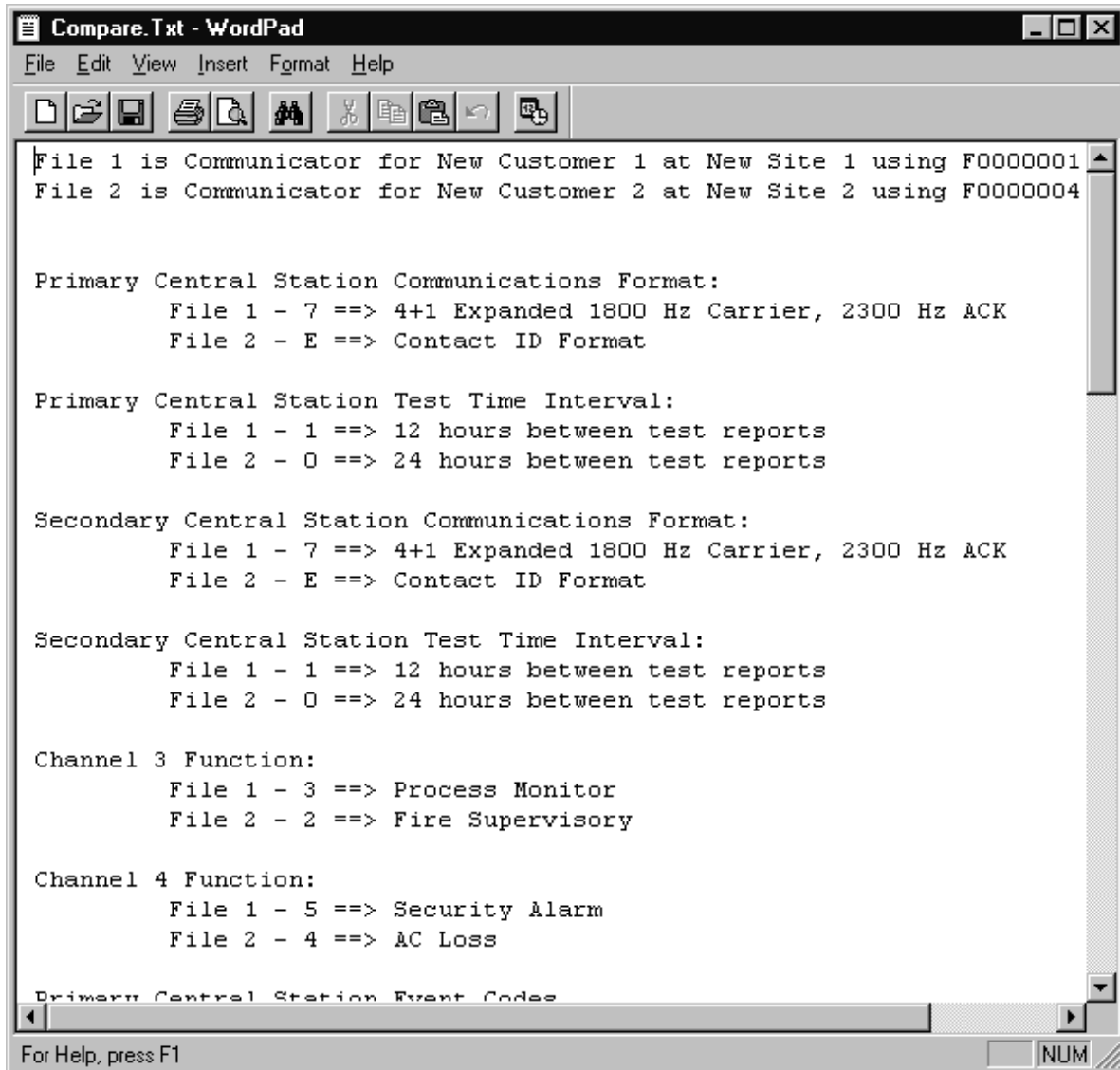
At the bottom of the window are three buttons: 'Clear All', 'Press 'F1' for help', and 'Exit'. Checkmarks in the boxes next to the fields indicate differences between the two files being compared.

The Quick View window indicates the fields which differ from file to file without specifying the actual differences. A check mark, in the box next to the field, indicates that field contains different information in the two files being compared.

8.2 Detailed View of Differences

Clicking the **Detailed View of Differences** button will display the window shown in Figure 8-5.

FIGURE 8-5: Detailed View of Compare



The Detailed View window is a Wordpad text window that displays the specific differences between the two files being compared. A field-by-field comparison is provided between the first program file and the second file. A printout of this screen is available by clicking **File** and clicking **Print** in the File menu.

CHAPTER 9 *Security Features*

Security features have been incorporated into the PK-411UD software to maximize digital communicator integrity and reliability. These features include the following:

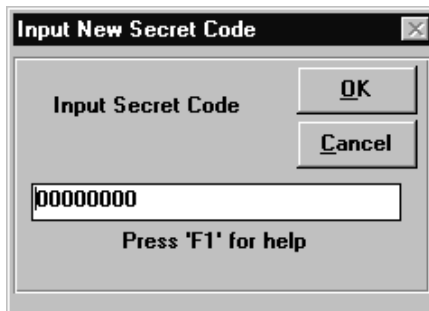
- ✓ restricted access to the program
- ✓ communicator callback to service terminal
- ✓ digital communicator time-out
- ✓ data error checking
- ✓ central station acknowledge
- ✓ central station data protection

9.1 Secret Code

The Secret Code for each 411UD/411UDAC digital communicator is set to a factory default value of 00000000. The Secret Code for each communicator should be customized by the PK-411UD user. The code can only be changed through an initial download to the communicator or by using the Change Secret Code feature.

To change the Secret Code after it has been established by an initial download, select Change Secret Code from the Main Menu. Clicking the **Change Secret Code** button will cause the window shown in Figure 9-1 to be displayed. A flashing cursor will be positioned in the box at the bottom of the window.

FIGURE 9-1: Secret Code



Type from 1 to 8 characters for the new Secret Code. Use the mouse arrow to click the **OK** button. The window shown in Figure 9-2 will be displayed.

FIGURE 9-2: Downloading Secret Code



Select one of the three options:

- ✓ Callback Service Terminal 1
- ✓ Callback Service Terminal 2
- ✓ Disable Callback

Once the selection has been made, click the **OK** button to download the new Secret code to the digital communicator. The Customer File is automatically updated with the new Secret Code.

9.2 Panel Callback

Upload or download operations may require the digital communicator to callback the service terminal initiating the call, before proceeding with a data transfer. Note that 'Disable Callback' may be selected by the master operator, which will allow the operator to complete an upload/download from any service terminal location. This callback procedure is incorporated into the software for the following reasons:

- ✓ Confirmation of service terminal initiating call
- ✓ Insures that only authorized service terminal can access the digital communicator
- ✓ Digital communicator must notify the central station(s) of request for upload or download. If central station(s) denies the request, the communicator will not callback the service terminal

9.3 Digital Communicator Time-out

The 411UD/411UDAC software has been designed to terminate communications with a service terminal if valid data is not received within a specific period of time. Reasons for the termination are as follows:

- If the modem connect sequence does not occur within 30 seconds of the digital communicator answering a call, the communicator will terminate (hangup) the call. This is a protection against wrong numbers interfering with normal digital communicator operations
- Following the connection of the digital communicator and service terminal modem, any errors occurring during message or data transfers will prompt an attempt to retransmit the information. If transmission errors continue with each retry, the communicator will terminate the call after 2 minutes
- Following the connection of the communicator and service terminal modem, any delay of 2 minutes or more in initiating a data transfer will result in the communicator terminating the call
- After answering a call from service terminal, the communicator will attempt to callback the service terminal a maximum of 4 times (Callback Service Terminal enabled). If the Secret Code is not verified after the 4th attempt, the communicator will hangup and notify the Central Station(s) of the failed upload/download attempt. Possible reasons for failure of the service terminal to answer a callback are as follows:
 - ✓ Service terminal phone line inoperative
 - ✓ Service terminal modem failure
 - ✓ Service terminal window initiating call has been exited before receiving callback
 - ✓ Data transmission errors have occurred prompting up to a 2 minute time-out. 4 callbacks have been made, each resulting in up to a 2 minute time-out.

9.4 Error Checking

Data from the service terminal is transmitted to a temporary holding buffer in the digital communicator. This data is verified by the communicator for integrity and if the data is correct, it will be transferred from the temporary buffer to the communicator memory for permanent storage and immediate use.

If the data is found to be incorrect, the digital communicator will request the service terminal to retransmit the data. If the retransmitted data is still incorrect, the communicator will continue to request retransmission for a maximum of 2 minutes. If still unsuccessful, the communicator will terminate the connection. Should a failure to transmit occur, the operator must reinitiate the sequence at the service terminal.

9.5 Central Station Acknowledge

The digital communicator will report to the Central Station(s) that a request for upload or download has been received. If the Central Station(s) does not acknowledge receipt of this request, uploading or downloading is prohibited. If acknowledged by the Central Station(s), another message is transmitted by the digital communicator informing the Central Station(s) that:

- downloading was successful
- uploading was successful
- uploading/downloading was not successful

9.6 Password Protection

The PK-411UD provides four user access levels, each requiring a password for access. Refer to “Operator” on page 16, for a description about this process.

- Level 0 is reserved for the Master(s). All PK-411UD options are available to the Master. In addition, the Master must assign all other levels and their passwords and may view Operator Information
- Level 1 has access to all options except the assignment of level access and passwords and Level 1 cannot disable Central Station callback. A Level 1 user can view only their own Operator information and can change only their own password
- Level 2 can upload from the digital communicator, view the upload data, print the upload and download data, change the modem configuration and view the download data but not edit and save it. A Level 2 user can view only their own Operator information and can change only their own password
- Level 3 can only view and print the upload data. A Level 3 user can view only their own Operator information and can change only their own password

Notes

Index

Numerics

411UD 6, 34, 35, 44
411UDAC 6, 36, 37, 38, 39, 44, 45

A

AC Loss Delay Timer 34, 35, 36, 38
Access Level 17
 0 17
 1 17
 2 17
 3 17
Account Code 32
Alarm Verification 36
Auto Silence 36, 38
Auto-Detect
 see Communication Port
Automatic Download 44, 53
 411UD 54
 411UDAC 54
Automatic Download List 43

B

Backup Reporting 33
Baud Rate 10, 23

C

Callback 7, 46, 48
Callback Panel 62
Centering Windows 14
Central Station 33
 Backup Reporting 33
Central Station Acknowledge 7, 63
Central Station Programming 31
 Service Terminal Phone Number 31
 Valid entries 31
Change Directory 12
Channel Function 37
Communication Port 23
 Auto-Detect 23
Communications 46
Communications Format 32
Communicator Disable 33
Communicator Selection 15
Communicator Time 52
Compare Files 57, 58
 Detailed View 60
 Quick View 59
 View 58
Complete Reprogramming 55
Configure Modem 10
Controller 33
Converting Upload File to Download File 49
Copyright Window 14
Current Information 51
Customer
 Add Site Information 27
 Add to Database 25, 26
 Button 25
 Delete from Database 26
 Delete Site Information 27
 Information 25
 Print Files 29
Customer File Utility 6
Customer Files Window 29

D

Data Entry 24
Default Directory 19

Default Directory and File 18
 default path 12
Delay Timer 34, 37
Description of PK-411UD 6
Download
 with Callback 47
 without Callback 47
Download File Utility 6
Download to Communicator 46

E

Error Checking 7, 63
Escape 7, 8
 Recall 7
Event Code Programming 40
Event Codes 40

F

Features of PK-411UD 6
File Compare Utility 7
Filename Extension 28
Filename Selection 50

H

Hangup String 23
Help 7, 8
 On-line 8

I

Initialization 14
Initialization String 22
Input/Output Programming 34, 36
Install Directory 19
Installation 11
 Using Windows® 11

K

Keyboard Operation 14

L

Line Shared 42
Log-in 15

M

Master 17
Master Operator 14
Memory 9
Microprocessor 9
Modem 6, 22
 Baud Rate 10
 Communication Port 23
 Configure 10, 21
 Connections 11
 External 10, 11
 Hangup String 22, 23
 Initialization String 22
 Internal 10, 11
 Saving Settings 23
Modem Testing
 AT Test Command 23
 Dial Button 23
 Hangup Button 23
 Initialize Button 23
Modems 10
 Compatible 10
Modified Fields 44
Monitor 9
Mouse 9

N

NAC Coding 36, 39
Number of Rings 42

O

Operating System 6, 8
Operator 17
Operator Identification Utility 6
Operator Setup 16
Output Relay 37
Output Relay Programming 35

P

Panel Identification Number 7
Partial Reprogramming 55
Password 6, 14, 15, 63
 Access Level 17
 Level 0 63
 Level 1 63
 Level 2 63
 Level 3 63
 Operator 14
Phone System
 Rotary 32
 Make/Break Ratio 32
 Touch Tone 32
Print Option 30
Print Options 29
Print Utility 7
Program
 Current Information 28
 Factory Default 28
 User Default 28
Program File
 Add to Database 27
Program Files 13
 Customizing 31
 Off-line 13
 On-line 13
Programming 6
Programming Utility 6
 Installation 11
 Installation Prompts 12
 Inventory 11
 Run Upload/Download Program 14

R

Recall 7, 8, 50, 51
Record Count 17, 18
Restoral Method 36, 39
Retries 49
Ring Duration 42
RJ11 Jack 11

S

Secret Code 7, 56, 61
 Change 56, 61
Security Features 7, 61
 Central Station Acknowledge 63
 Digital Communicator Time-out 62
 Error Checking 63
 Panel Callback 62
 Password Protection 63
 Secret Code 61
Service Terminal 41, 42
Service Terminal Programming 41
Setup 16
 Default Directory and File 16

Modem 16
Operator 16
Silence Inhibit 36
Slave Communicator 33
Software Registration 14
System Requirements 9
 Environment 9
 Memory 9
 Microprocessor 9
 Monitor 9
 Mouse 9

T

Test 33
Test Time 32
Test Time Interval 32
Time-out 7, 62
Transfers 49
Trouble Call Limit 33
Trouble Reminder 34, 35, 36
Troubleshoot 7, 52
 411UD 52
 411UDAC 53

U

Upload File Utility 7
Upload from Communicator 48
User Default File 20

V

View Log 55

W

Windows® 11

Notes

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