Unication Group

Product Family GearStar POCSAG (RS232)

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Pager Programming Guide

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Contents

Scope Of This Manual

The first section contains information about equipment requirements for, installation, setup and use of the GearStar Pager Programming Software (PPS)

The second section contains the sequence of screens used to read and program a pager or pagers.

The third section provides a technical description of the Pager Mechanical Interface.

The fourth section is a troubleshooting guide.

The last section is a glossary of technical terms.

Product names are subject to change without notice. Some product names are available only in certain markets.

Information Presentation

This manual presents different types of information in different ways:

- Information that you need to type is printed in **boldface type**.

- When information from the screen is referred to in the text, **it looks like this**.

- When you need to press a key on the keyboard, the key is represented graphi-cally. For example, instead of "Press the Enter Key"; you will see **Enter** s   ”

Special characters are used to emphasize certain conditions.

Note: Emphasizes additional information pertinent to the subject matter.

Caution: Emphasizes information about actions which may result in equipment damage.

Warning: Emphasizes information about actions which may result in personal injury.

Field Description Information

Any screen that contains fields is followed by a table of field descriptions. These tables are divided into two columns:

1. **Field Name** – shown exactly the way it appears on the screen.

2. **Description** – a complete description of what the field is for, how you can use it, what the valid entries are, and how a specific entry is this field can affect the status of another field.

Getting Started

The GearStar PPS and interface package, combined with an IBM[®] personal computer (or compatible), provides the flexibility to program GearStar pagers to meet individual requirements. This software has a modern look and ease-of-use operation. To obtain the best results from the product, please take a few minutes to read this instruction guide.

Equipment Required

- **IBM Personal Computer or compatible** (not included)
  The GearStar programming is designed to operate on the IBM personal computer or compatible with Windows 98, 2000 or XP, a serial port, and 32M or 128M of available RAM.
- **Pager Mechanical Interface** (not included)
  These fixtures are designed specifically for the GearStar pager. It allows the pager to be connected to the computer.
- **Pager Programming Software** (included)
  This software program, designed specifically for the GearStar pager, allows you to select the desired information to program into the pager. A program diskette is provided to facilitate the programming procedure.

Equipment Setup GearStar

Refer to Figure 1 while performing the following steps.

1. Plug the serial cable into the Pager Mechanical Interface. Connect the other end of the serial cable to the serial port on your computer

The program uses COM1 as the default communications port. If both a serial port and a modem are used on the computer, it is recommended that COM1 be used as the serial port. If COM1 cannot be used, change the default to COM2 in the File/Setup menu item when using the software.

Use only the Unication-supplied cable for connecting the Pager Mechanical Interface. Use of non-approved cables can result in improper operation and/or incorrect programming of the pager.

2. Plug the power supply cable into the Pager Mechanical Interface and plug the ac/dc adapter into a 120 Vac (or 220 Vac) electrical outlet.
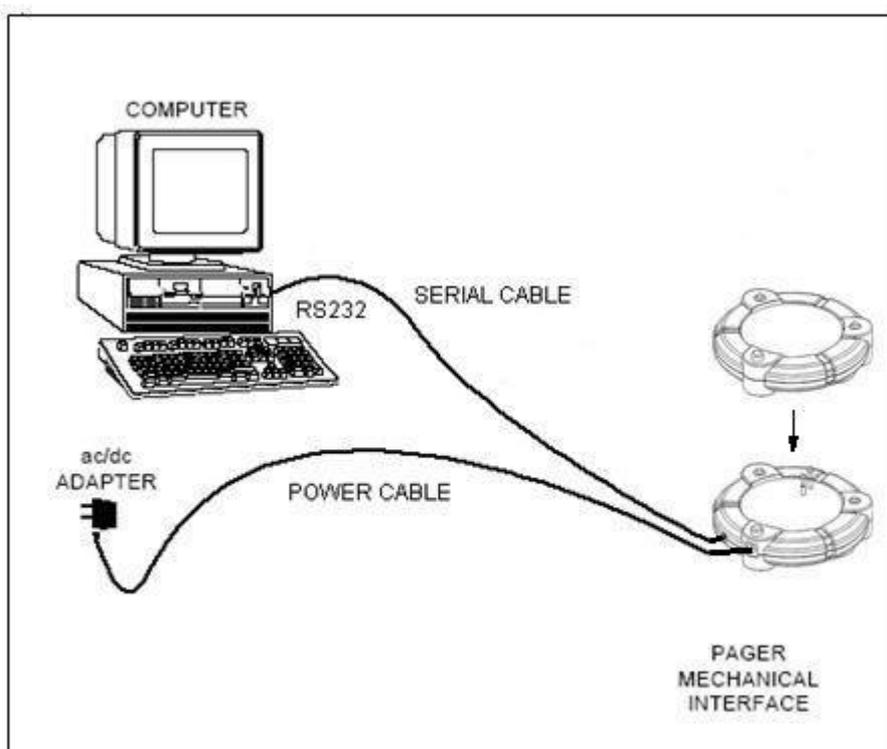
Figure 1. GearStar Equipment Connection Diagram

Preparing a GearStar for Reading or Programming

1. Remove the battery.
2. Align the contact pads within the battery compartment and the belt clip with the contact pins and the belt clip hole of the pager Mechanical Interface.
3. Place the pager on the Pager Mechanical Interface.
4. Connect the pager and pager mechanical interface until it is tight in the fixture. The pager is now ready to read or program.

Installing The Software

The GearStar programming software includes the SETUP.EXE. This file automates installing the software onto the hard (drive) of your computer

◆ *Only one configuration for the programming software is allowed; therefore, if you want to keep an old/new version of the programming software, you must remove the current version which is on your system.*

Double click the "SETUP.EXE" icon, the screen will be shown as below.

◆ *Click "Cancel" at any time to end the Setup program.*

Installation Parameters

Click "Next" to enter the next screen.
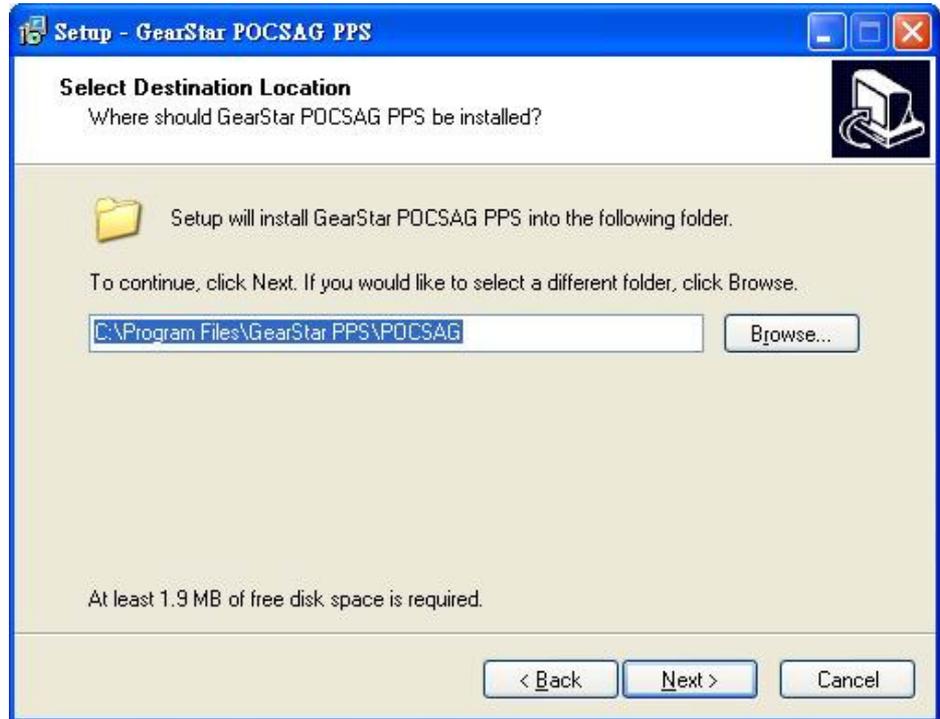
Getting Started

Click "Browse" to change the location where you want to install the software or click "Next" to enter the next screen.
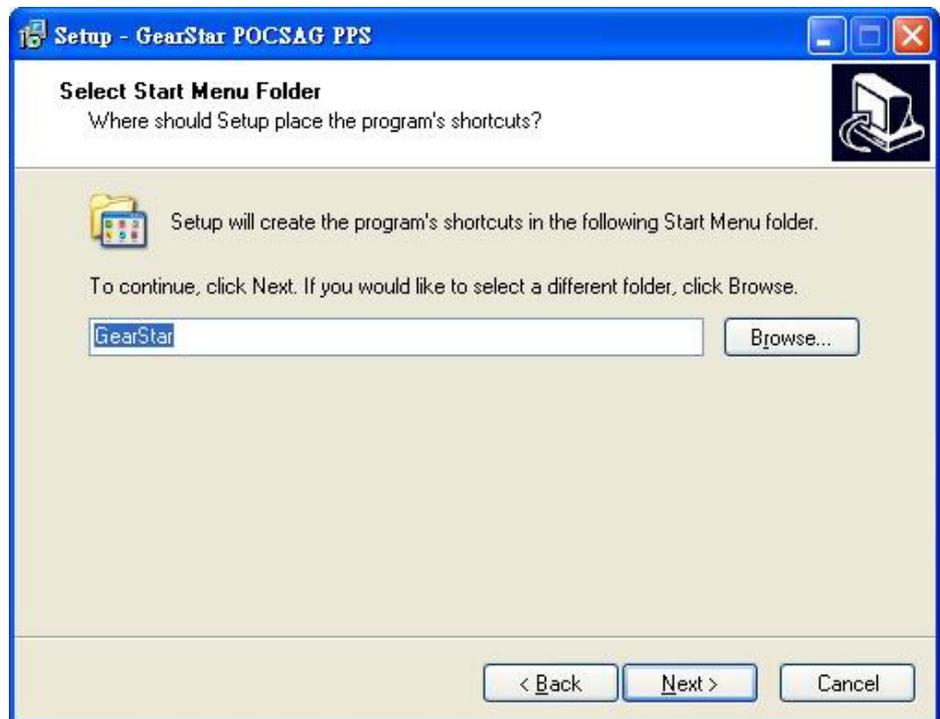
Click "Browse" to change the location where you want to install the software or click "Next" to enter the next screen.

Click "Finish" to exit the installation program.

Basic Layout

The GearStar PPS uses a graphic interface that supports both a mouse and a keyboard. Anything that can be done with the mouse can be done with a key sequence. Refer to Figure 2.

1. Title Bar -Located above the menu bar, a non-selectable region that contains the title name of the program.

2. Desk top -The main portion of the screen, where most of the interaction occurs during programming. All dialog and message boxes activated from the menu bar and status line are displayed on the desktop.

3. Menu Bar-E ach menu name that is visible on the menu bar contains menu items that are closely related to it. When a menu is selected, such as File, the menu displays specific actions that can be chosen.

4. Status Line-Located at the bottom of the window, describes the current status of the desktop. C licking the mouse or pressing the associated function key activates the status line. T he line calls out the most important function being performed or frequently used.
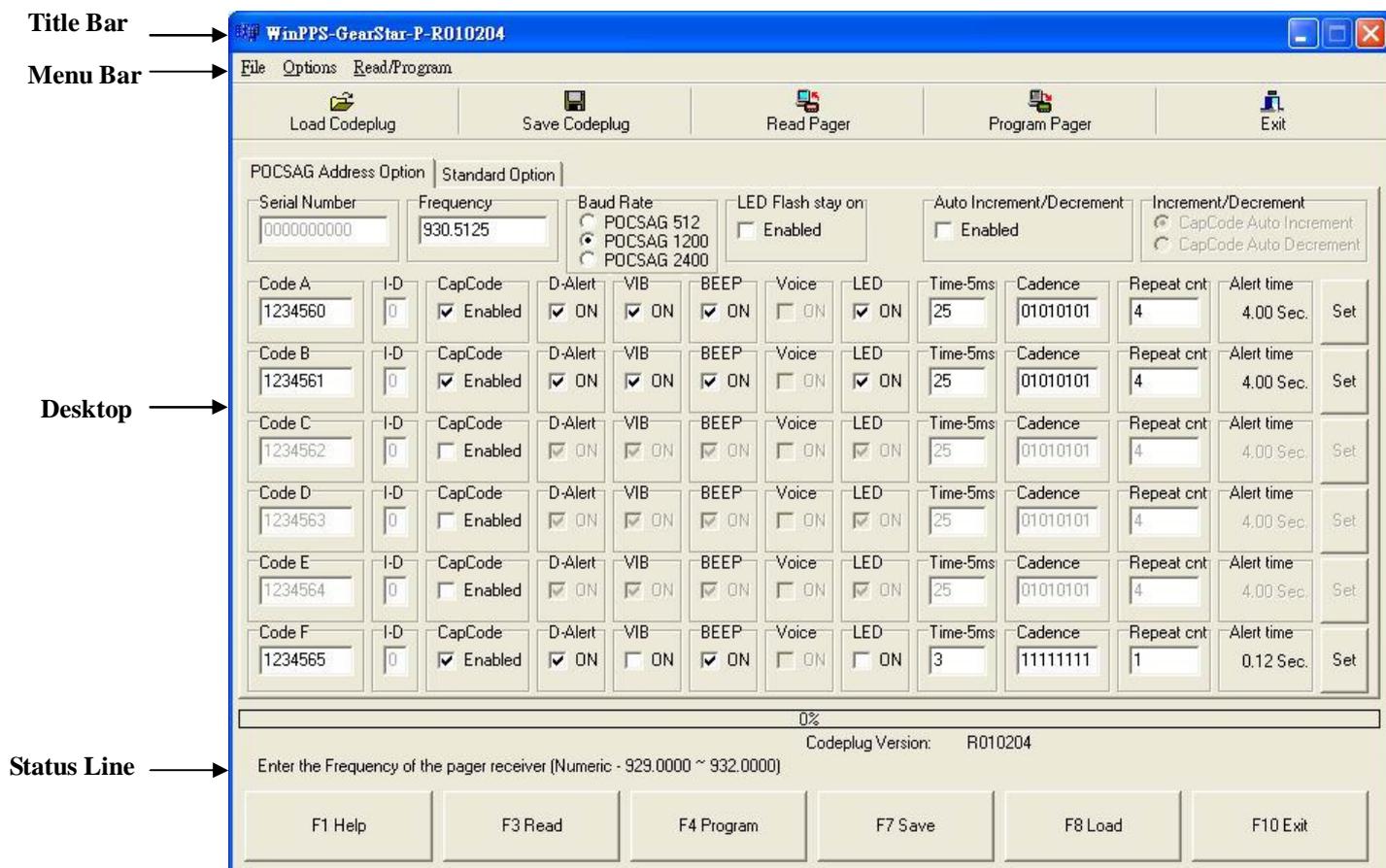
Figure 2. GearStar PPS Blank Desktop Screen

The F1 Help key is always displayed. All active function keys can be viewed at any time by selecting F1 Help.

Keyboard Shortcuts

Many times you can use a keyboard shortcut. These are expressed as [Alt][F],
[Ctrl][G], and so on. The following examples show how to use these commands.

[Alt][F] Press and hold [Alt] and press [F]. Release both keys together.

[Alt][F], [X] Press and hold [Alt] and press [F]. Release both keys together.
Press and release [X].

[Ctrl][C] Press and hold [Ctrl] and press [C]. Release both keys together.

To select a menu item using the keyboard, press the [Alt] and the highlighted letter in
the menu name to open that menu. For example, to open the File menu, press [Alt][F].
The File menu opens to show the items available. Press [L] to load the codeplug.

[Esc] is used to cancel a menu or a dialog box without performing any operation.

Press and hold [Ctrl] and press [Tab] moving to the next option page.

Some menu items have a key stroke combination at the right side of the menu that also
activates the item. These keyboard shortcuts are often referred to as hot keys.
Usually these are function keys [F7] or [F8], or a combination of a function key and
[Alt], [Ctrl], or [Shift] such as [Shift][F8]. Pressing these keys performs the operation
without having to open the menu.

Pull-down Menus

The menu bar at the top of the desktop contains menu files. Each menu can be opened by using the alternate key combination, such as Alt F ; by clicking the mouse on the menu title. The menu opens to show items contained in the menu, as shown in Figure 3. Some menu items open another menu.
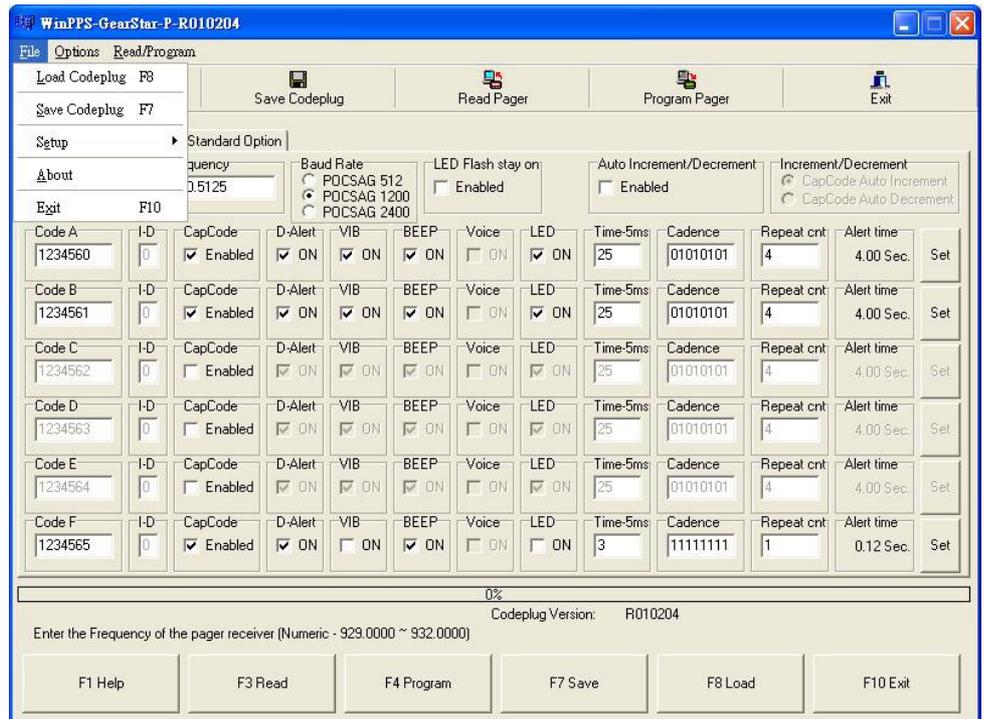
Figure 3. Menu Bar with the File Pull-Down Menu

Dialog Boxes

Dialog boxes are windows on the desktop that can be selected, moved and closed. They contain information visible to you as text or data fields. Most interaction and all codeplug data is maintained within dialog boxes.

Two types of dialog boxes exist: modal and non-modal. Modal dialog boxes are boxes which must be acted upon when they are open. Nothing else on the desktop functions until the modal dialog box is closed. A non-modal dialog box is the opposite in that you can select any other section of the desktop to work in while the non-modal dialog window is open.

Dialog Commands

Dialog boxes can be selected, moved, and closed. Help dialog boxes can also be resized.

Help

These modal windows display help text. I f the help text is too long for the area allotted, a scroll bar permits scrolling the text for additional information by clicking on the up and down arrows or by using the cursor keys on the keyboard. Help dialog windows can be moved and resized.

## Field Entries

Check Boxes

Check box items can be selected by either clicking in the box or toggling using the space bar. When the check box is selected, an X appears, as shown in Figure 4. If several check boxes exist within a region, ↑ and ↓ moves to each check box. Each check box is independent of the other check boxes.

Standard
☑ Out of Range Indicator
☐ Invert Data
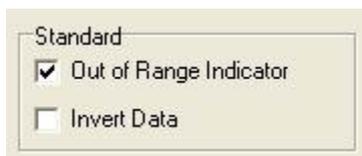
Figure 4. Check Boxes

Radio Buttons (Select One)

Radio button items are groups of choices of which only one can be selected from the group. The item selected is indicated by a bullet, as shown in Figure 5. The entry within the radio button box can be changed by either clicking the mouse on an entry or by using ↑ and ↓ on the keyboard.

Increment/Decrement
◉ CapCode Auto Increment
○ CapCode Auto Decrement

Figure 5. Radio Buttons

Input Line

Input line items are entries which require character entry from the keyboard with restrictions as described in each Field Description table. The input line can be selected either by `Tab`, `Shift` `Tab` or clicking on the field. Highlighting of the field indicates the previous entry is replaced by the new entry as soon as typing begins. If the field is not highlighted, characters are inserted into the existing data, if room exists, at the position of the cursor in the field.

The `↑`, `↓`, `←`, and `→` keys move the cursor within the field.

Using Your PPS

Overview for Programming a Pager

To read and program your pager, follow these steps:

1. Select **Read/Program** from the Menu Bar.

2. Enter information in the **Options** screens.

3. Select a program option, either **Program Pager**, from the **Read/Program** menu.

These steps are shown graphically in Figure 6:

```
┌─────────────┐
│    MENU     │
│    BAR      │
└─────────────┘
       │
       ▼
┌─────────────┐
│   OPTION    │
│  SCREENS    │
└─────────────┘
       │
       ▼
┌─────────────┐
│  PROGRAM    │
│   OPTION    │
└─────────────┘
```
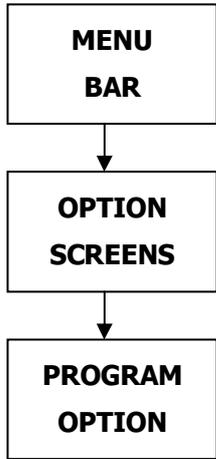
Figure 6. Basic Steps in Programming a Pager

Getting Help

The [F1] key is used for help. On-screen help is available whenever you see **F1 Help** in the lower left-hand corner of the screen. All menus in this program use [F1] for help.

Main Menu (Menu Bar)

Please see the main menu screen as shown in Figure 7. You can use the menu bar or the function keys listed along the bottom of the screen to read and program the pager.
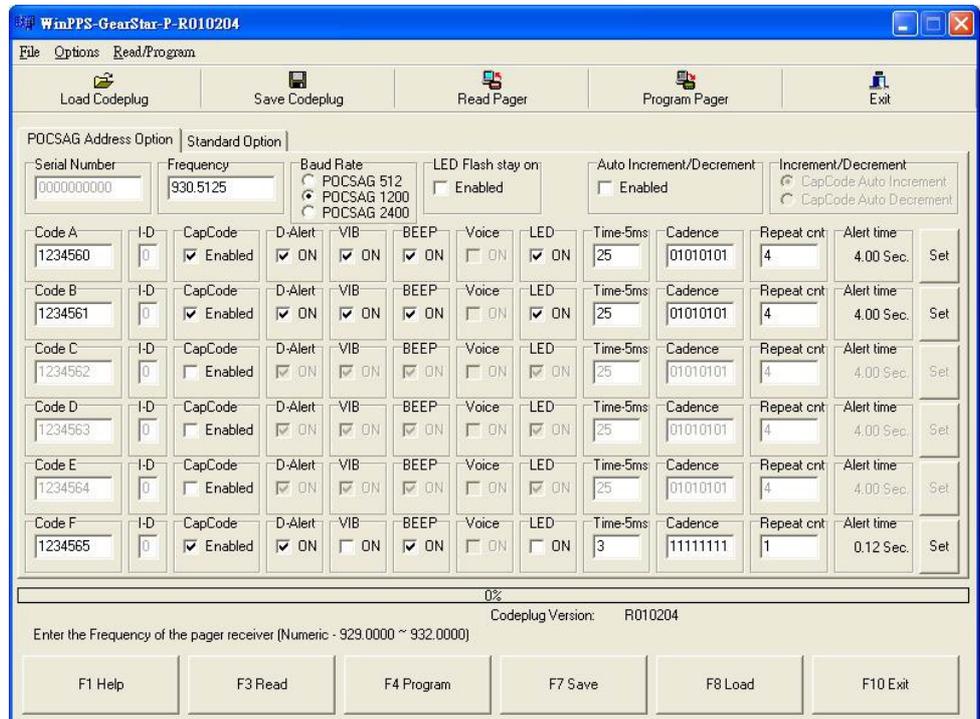

Figure 7. Main Menu Screen

Reading a Pager

To read a pager, do any one of the following:

• Press F3 .

• Click on Read/Program on the menu bar and click on Read Pager.

• Press Alt R , and press Enter .

Programming a Pager

To program a pager, do any one of the following steps:

• Press F4 .

• Click on Read/Program of the menu bar and click on Program Pager.

• Press Alt R , if **Program Pager** is not highlighted press ↓ until it is highlight, and press Enter .

File Menu

The main menu has four sections: **File**, **Options**, **Read/Program.**

To select the **File** menu, click on the menu bar item **File** or press [Alt] [F]

simultaneously. The **File** pull-down menu displays, as shown in Figure 8.
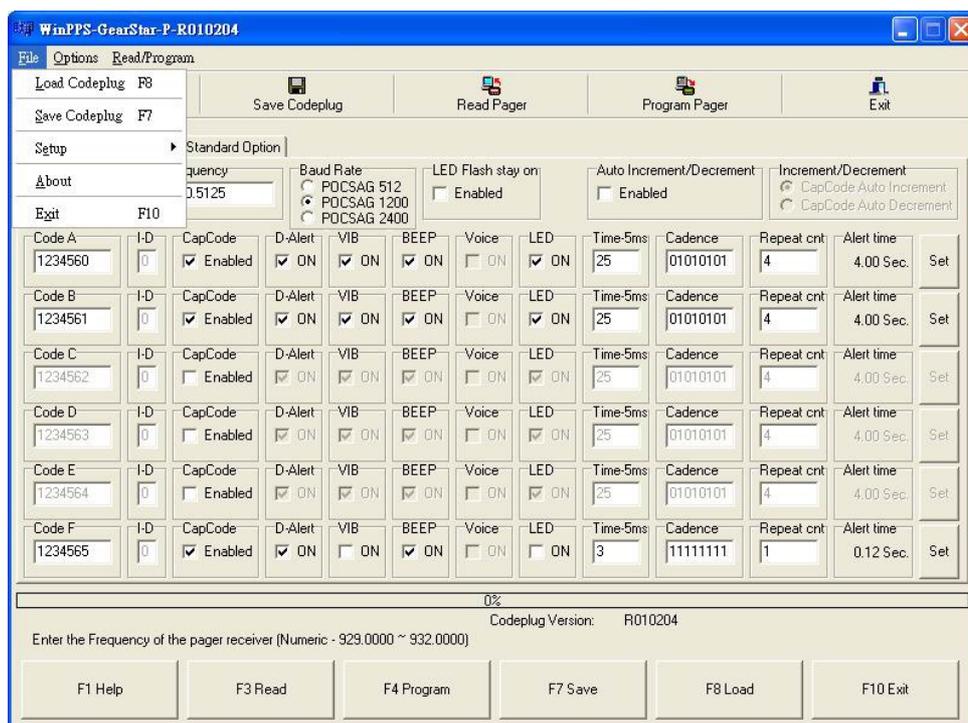
Figure 8. File Menu Screen

The **File** pull-down menu has five items: Any of the menu items can be selected in one
of three ways:

- Click on the text.
- Press the function key associated with the command/option, such as [F8] for
  Load Codeplug.
- Type the highlighted letter for the command, such as [L] for **Load Codeplug.**

When a window is active, use the mouse or press [Tab] and use the arrow keys to
position the cursor. Either click with the mouse or press [Enter].

Load Codeplug

Figure 9 shows the **Load Codeplug Archive** screen. Selecting this screen loads an existing codeplug from disk storage. Choose the codeplug from the list or enter the name on the input line. Click **Open** to load or **Cancel** to exit.
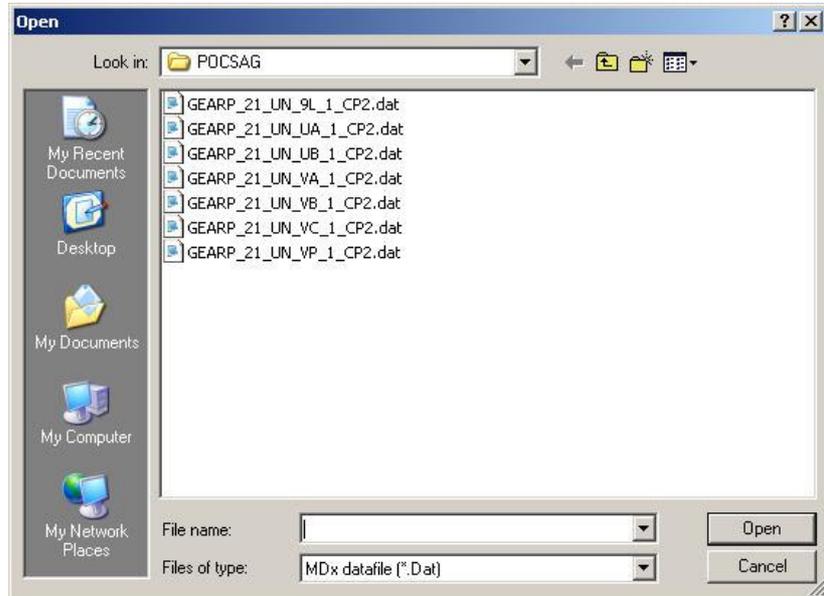
Figure 9. Load Archive Screen

Save Codeplug

Figure 10 shows the **Save Codeplug** screen. Selecting this screen creates a file on disk with an extension of .**DAT** as a default or any extension you choose. This file contains all current codeplug settings.
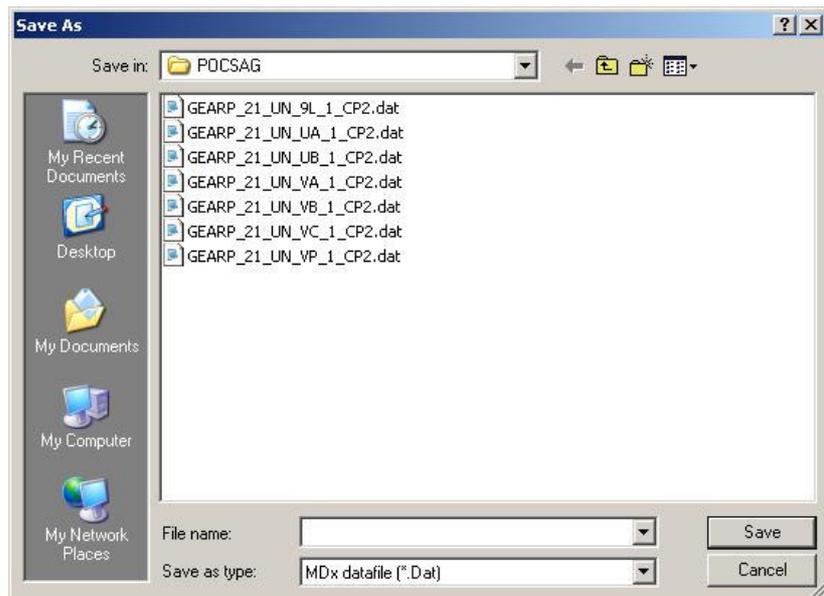
Figure 10. Save Codeplug Archive Screen

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Setup

Set up options screen are the serial port assignments, as shown in Figure 11.
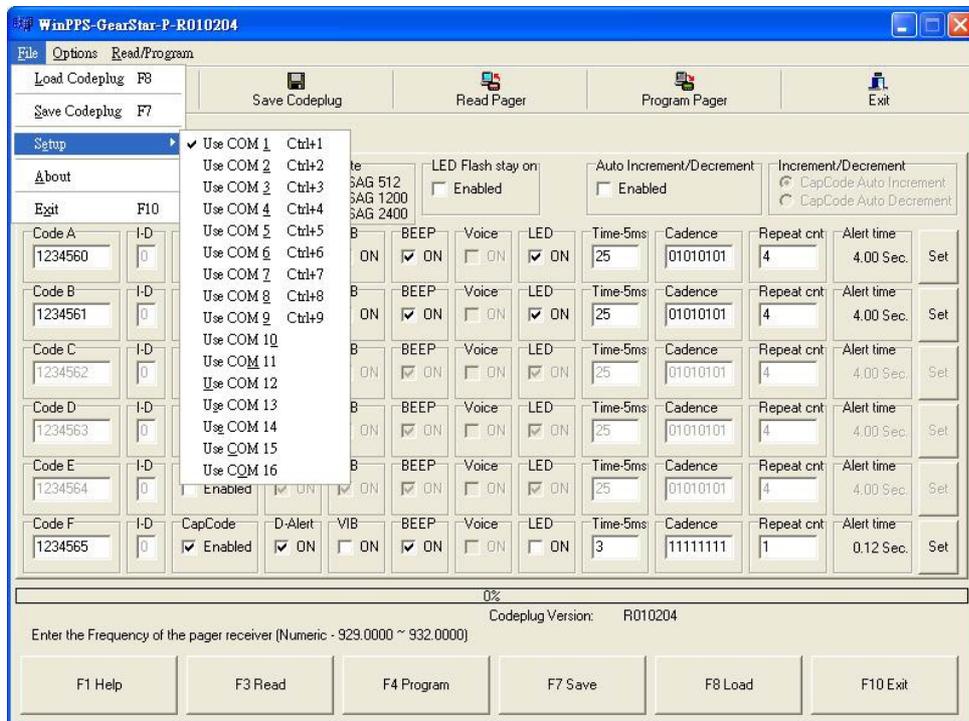
Figure 11. Setup General Screen

Field Name	Description
Setup	Either **COM1**, **COM2**, **COM3**, **COM4**, **COM5**, **COM6**, **COM7**, **COM8**, **COM9**, **COM10**, **COM11**, **COM12**, **COM13**, **COM14**, **COM15**, or **COM16** must be selected as the serial port where the Universal Programmer Interface is connected. (see Q&A)

Communications conflicts may occur between your mouse and serial ports.

To avoid these conflicts, make sure your devices are not:

-set to the same port

-both set to an even port

-both set to an odd port

Changing your serial port to work on a different communications port is recom-mended. Ensure that any I/O de vices are not assigned to IRQ3 or IRQ4 as these may conflict with the software serial port drivers.

Exit

The Exit command or [F10] exits the desktop.

Options Menu

The options pull down menu has four items: POCSAG Address, Standard, as shown in

Figure 12.
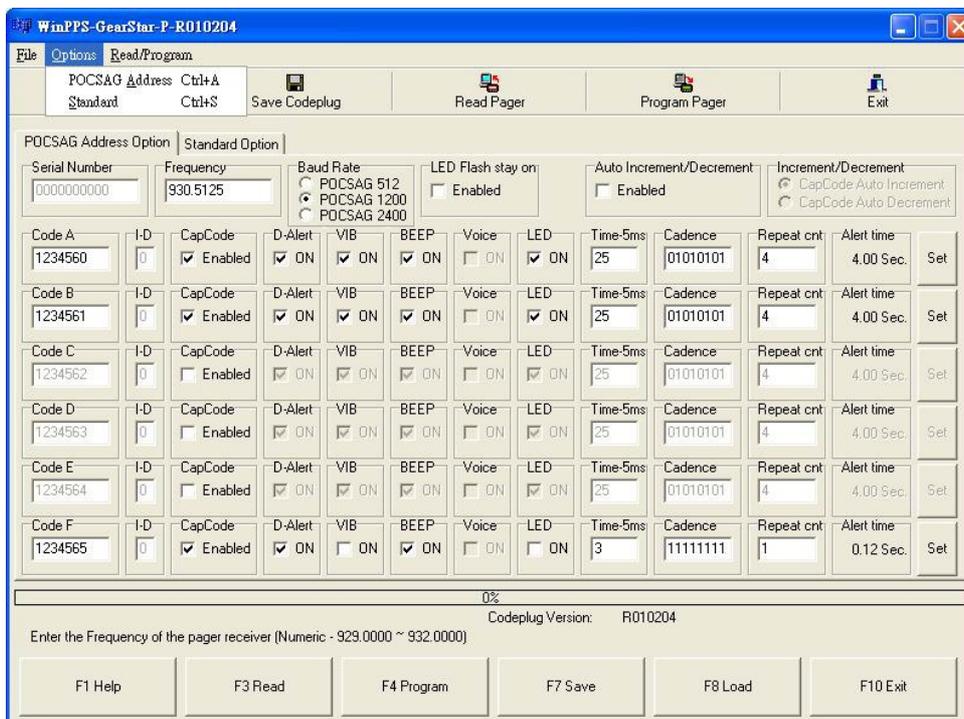
Figure 12. Options Pull-Down Menu

POCSAG Address Options

The **POCSAG Address Options** screen is shown in Figure 13. Each field is described in the following table.
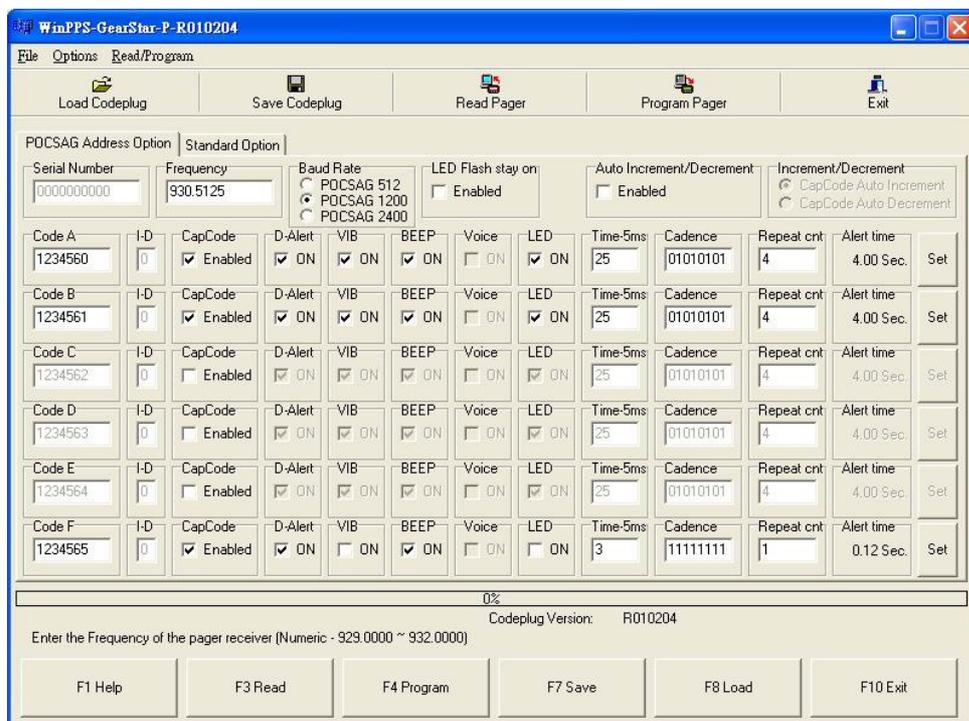
Figure 13. POCSAG Address Options Screen

Field Name	Description
Serial Number	This is the serial number of the pager. It cannot be changed.
Frequency	This field specifies the frequency at which the pager operates. The valid range for non-synthesized pagers is:
	VHF A Band 143.0000 to 152.9875 MHz
	VHF B Band153.0000 to 162.9875 MHz
	VHF C Band 163.0000 to 174.0000 MHz
	VHF D Band 137.0000 to 142.9875 MHz
	UHF A Band 450.0000 to 459.9875 MHz
	UHF B Band 460.0000 to 470.0000 MHz
	900 Band 929.0000 to 932.0000 MHz
	NOTE: Valid frequency ranges are subject to change without notice. Press [F1] while the cursor is in this field for a current listing of valid frequency ranges.
Baud Rate	This field designates either:
	POCSAG 512
	POCSAG 1200
	POCSAG 2400
	Press the spacebar to toggle among choices

Field Name	Description
LED Flash stay on	When 'LED Flash stay on' is enabled, 'Repeat cnt' of 'Post Alert LED Flash Settings' is disabled, 'Flash time' of 'Post Alert LED Flash Settings' displays 'Stay on'. When pager completes receiving the message, as same, pager should be flashed LED stay on after key pressed during paging alert. Only when connect the pager and charger interface, pager stops flash LED.
Code A / Code B **Code C / Code D** **Code E / Code F**	The address field is used to generate the POCSAG CAPCODE. The address field can be a seven-digit short address. Short address range: 0000008- 2007663, 2007672- 2045055 and 2045064- 2097151.
CapCode Enable A/B/C/D/E/F	Enabling this field causes `Code A/B/C/D/E/F` fields to display.
D-Alert A/B/C/D/E/F	When D-Alert is enabled, the 'Code' of the pager default alert for a specified alert duration when an alert condition occurs. When D-Alert is disabled, the list of the Extend ID of 'Set button' will appear and can be set in different modes of the alert.
VIB A/B/C/D/E/F	When Vibrate is enabled, the 'Code' of the pager vibrates for a specified alert duration when an alert condition occurs.
BEEP A/B/C/D/E/F	When BEEP is enabled, the 'Code' of the pager beep for a specified alert duration when an alert condition occurs.
LED A/B/C/D/E/F	When LED is enabled, the 'Code' of the pager LED for a specified light flash duration when an alert condition occurs.
Time and Cadence A/B/C/D/E/F	The time of each bit of Cadence is the number of 'Time field' multiplying 5ms. The Time range is from 1 to 99. Cadence can only key-in 0 or 1, must contain 8 characters.
Repeat cnt A/B/C/D/E/F	Repeat count means repeating times of 'Cadence'. The Repeat cnt range is from 0 to 99.
Alert time A/B/C/D/E/F	'Alert time' is a calculated value display to show the total alert time for the different alert settings. With this <Time-5ms>*5*8*<Repeat cnt>/1000 would tell the programmer how many seconds long the alert will be.
Set A/B/C/D/E/F	Press Set in the Time, LED1 Cadence, LED2 Cadence, Repeat cnt, Flash time and Extend ID (Extend ID will appear when the D-Alert is disabled.)
Auto Increment/Decrement **Increment/Decrement I-D**	Program Pager in that it performs an increment or decrement of the address after it has completed a successful write. The I-D range is from 0 to 8.

Set buttons

The **Set Buttons** screen is shown in Figure 14. Each field is described in the following table.
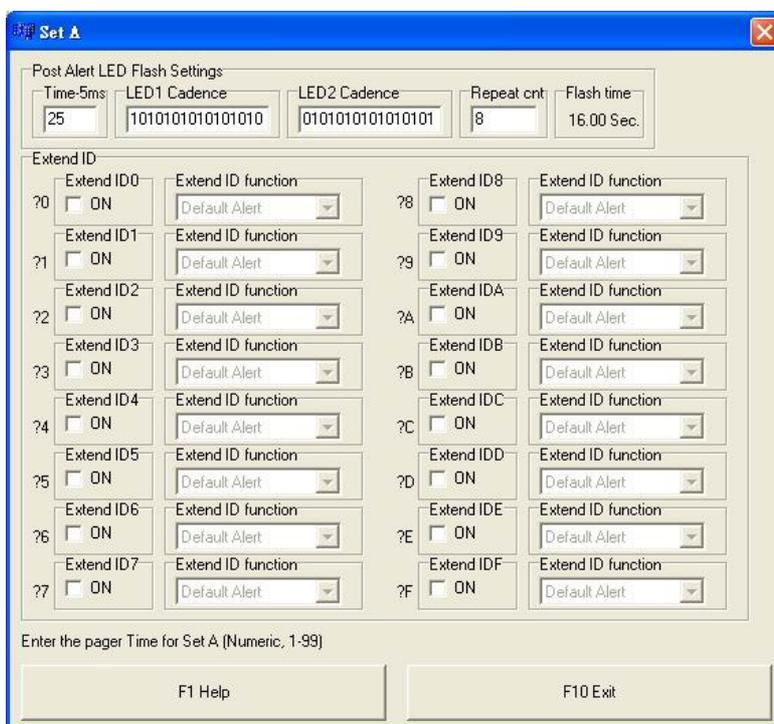
Figure 14. Set A/B/C/D/E/F   Screen

Field Name	Description
Time and Cadence A/B/C/D/E/F	The 'Time field' of 'Set button', 'LED1 Cadence field', 'LED2 Cadence field' and 'Repeat cnt field' mean the flash set of pager LED after completing receiving the message. The time of each bit of Cadence is the number of 'Time field' multiplying 5ms. The Time range is from 1 to 99. Cadence can only key-in 0 or 1, must contain 16 characters.
Repeat cnt A/B/C/D/E/F	Repeat count means repeating times of 'Cadence'. The Repeat cnt range is from 0 to 99.
Flash time A/B/C/D/E/F	When 'LED Flash stay on' is enabled, 'Repeat cnt' is disabled, 'Flash time' displays 'Stay on'. When pager completes receiving the message, as same, pager should be flashed LED stay on after key pressed during paging alert. Only when connect the pager and charger interface, pager stops flash LED. When 'LED Flash stay on' is disabled, 'Flash time' is a calculated value display to show the total flash time for the different flash settings. With this <Time-5ms>*5*16*<Repeat cnt>/1000 would tell the programmer how many seconds long the flash LED will be.

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| Field Name	Description
Extend ID and Extend ID function	Extend ID will appear when the D-Alert is disabled. The symbol from ?0 to ?F are the content of messages, consisting of 2 characters. The 'question mark ?' from ?0 to ?F can be input any number from 0 to F. When Extend ID is enabled, Extend ID function can be set in different modes of the alert.
Default Alert	Run Default Alert.
Alert X2	Run Default Alert 2 times.
Alert X3	Run Default Alert 3 times.
Alert X4	Run Default Alert 4 times.
Alert X16	Run Default Alert 16 times.
Alert X32	Run Default Alert 32 times.
Shutdown Pager	When received the code, the Pager will turn off receiver, until the pager rest on charger and take back for service or re-install battery.
Range Alert	A kind of test mode, when receiving the Range Alert code, the unit will Alert as setting for help confirm the Gearstar pager is in service range.
Search Alert	The feature help user to search the unit, when they forget where it is.
Selftest Alert	The test mode is designed for user easy to check Gearstar pager whether work normal or not.
Outrange ON and Outrange OFF	Outrange setting is help to turn ON/OFF service range detection, when change the mode which do not affect the Codeplug, because that will reset to Codeplug setting when power on by remove from charger.

Standard Options

The Standard Options window contains the pager options that are related to pager operation and display. Refer to Figure 15.
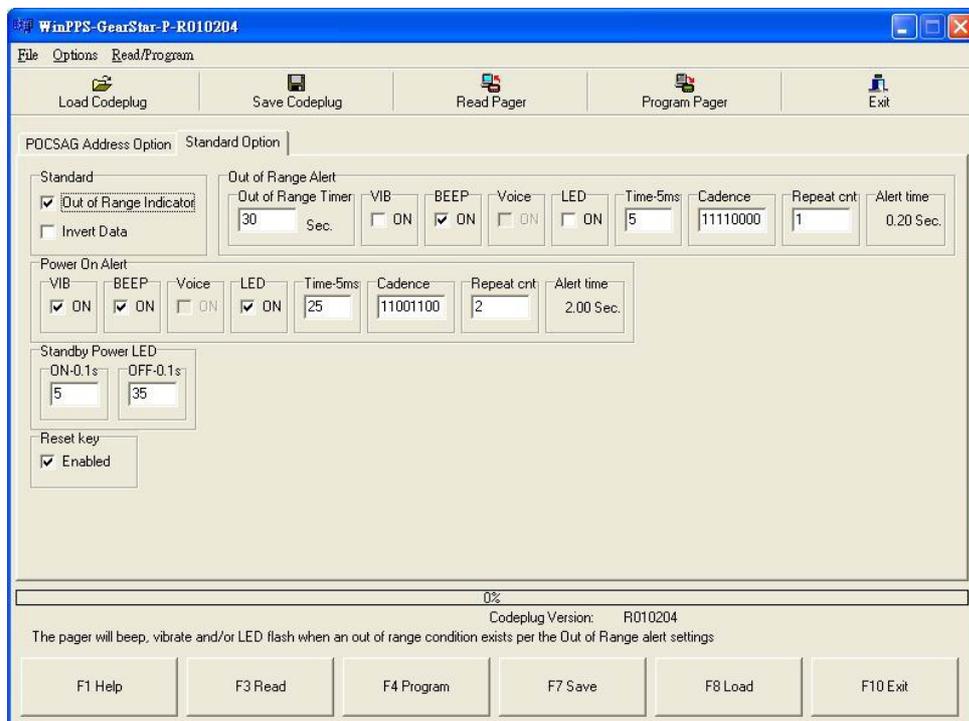
Figure 15. Standard Options Screen

Field Name	Description
Out of Range Indicator	When selected, the out of range message is displayed when the pager leaves the coverage area of the paging system.
Invert Data	This option allows you to override the default data inversion setting. Data inversion is determined by the paging terminal.
Out of Range Timer	Out of Range Timer specifies the length of time after an out of range condition exists that a beep, vibe and/or LED flash prompt is displayed. NOTE: The Out of Range Indicator must be selected in order to access these selections. The range must between 10 and 600.
VIB(Out of Range Alert)	When Vibrate is enabled, the 'Out of Range' of the pager vibrates for a specified alert duration when an alert condition occurs.
BEEP(Out of Range Alert)	When BEEP is enabled, the 'Out of Range' of the pager beep for a specified alert duration when an alert condition occurs.
LED(Out of Range Alert)	When LED is enabled, the 'Out of Range' of the pager LED for a specified light flash duration when an alert condition occurs.

Using Your PPS

Field Name	Description
Time and Cadence (Out of Range Alert)	The time of each bit of Cadence is the number of 'Time field' multiplying 5ms. The Time range is from 1 to 99. Cadence can only key-in 0 or 1, must contain 8 characters.
Repeat cnt (Out of Range Alert)	Repeat count means repeating times of 'Cadence'. The Repeat cnt range is from 0 to 99.
Alert time (Out of Range Alert)	'Alert time' is a calculated value display to show the total alert time for the Out of Range alert settings. With this <Time-5ms>*5*8*<Repeat cnt>/1000 would tell the programmer how many seconds long the alert will be.
VIB(Power On Alert)	When Vibrate is enabled, the 'Power On Alert' of the pager vibrates for a specified alert duration when an alert condition occurs.
BEEP(Power On Alert)	When BEEP is enabled, the 'Power On Alert' of the pager beep for a specified alert duration when an alert condition occurs.
LED(Power On Alert)	When LED is enabled, the 'Power On Alert' of the pager LED for a specified light flash duration when an alert condition occurs.
Time and Cadence (Power On Alert)	The time of each bit of Cadence is the number of 'Time field' multiplying 5ms. The Time range is from 1 to 99. Cadence can only key-in 0 or 1, must contain 8 characters.
Repeat cnt (Power On Alert)	Repeat count means repeating times of 'Cadence'. The Repeat cnt range is from 0 to 99.
Alert time (Power On Alert)	'Alert time' is a calculated value display to show the total alert time for the Power On alert settings. With this <Time-5ms>*5*8*<Repeat cnt>/1000 would tell the programmer how many seconds long the alert will be.
Standby Power LED ON	The number of field of 'Standby Power LED ON' multiplying 0.1 second is the period of time of light on the pager LED. The Standby Power LED ON range is from 1 to 30.
Standby Power LED OFF	The number of field of 'Standby Power LED OFF' multiplying 0.1 second is the period of time of light off the pager LED. The Standby Power LED OFF range is from 1 to 100.
Reset Key	If the pager is powering on or receiving the message, you can press the reset key to turn off the alert, vibrate and LED light.

Read/Program Menu

The **Read/Program** menu shown in Figure 16 has selections for reading and programming a pager.
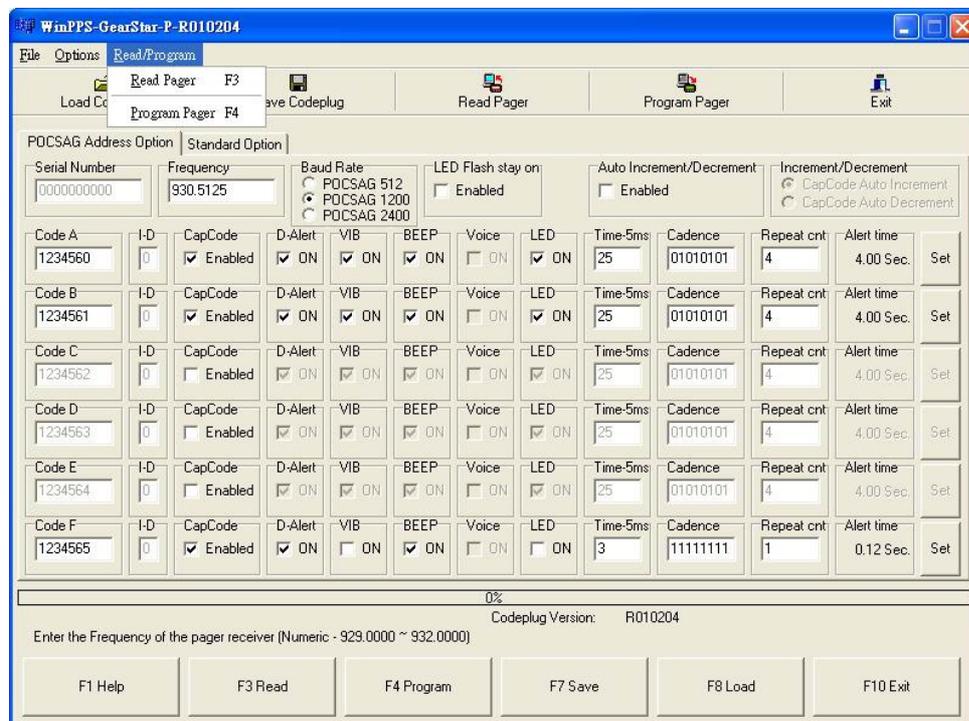

Figure 16. Read/Program Menu

Read Pager

Clicking on Read Pager or pressing [F3] reads the pager codeplug into the software. After the codeplug is read, all Option windows open so you can change the codeplug settings.

Program Pager

Clicking on Program Pager Single or pressing [F4] programs the pager with the current codeplug settings loaded into the software.

Exploded View Diagram and Parts List
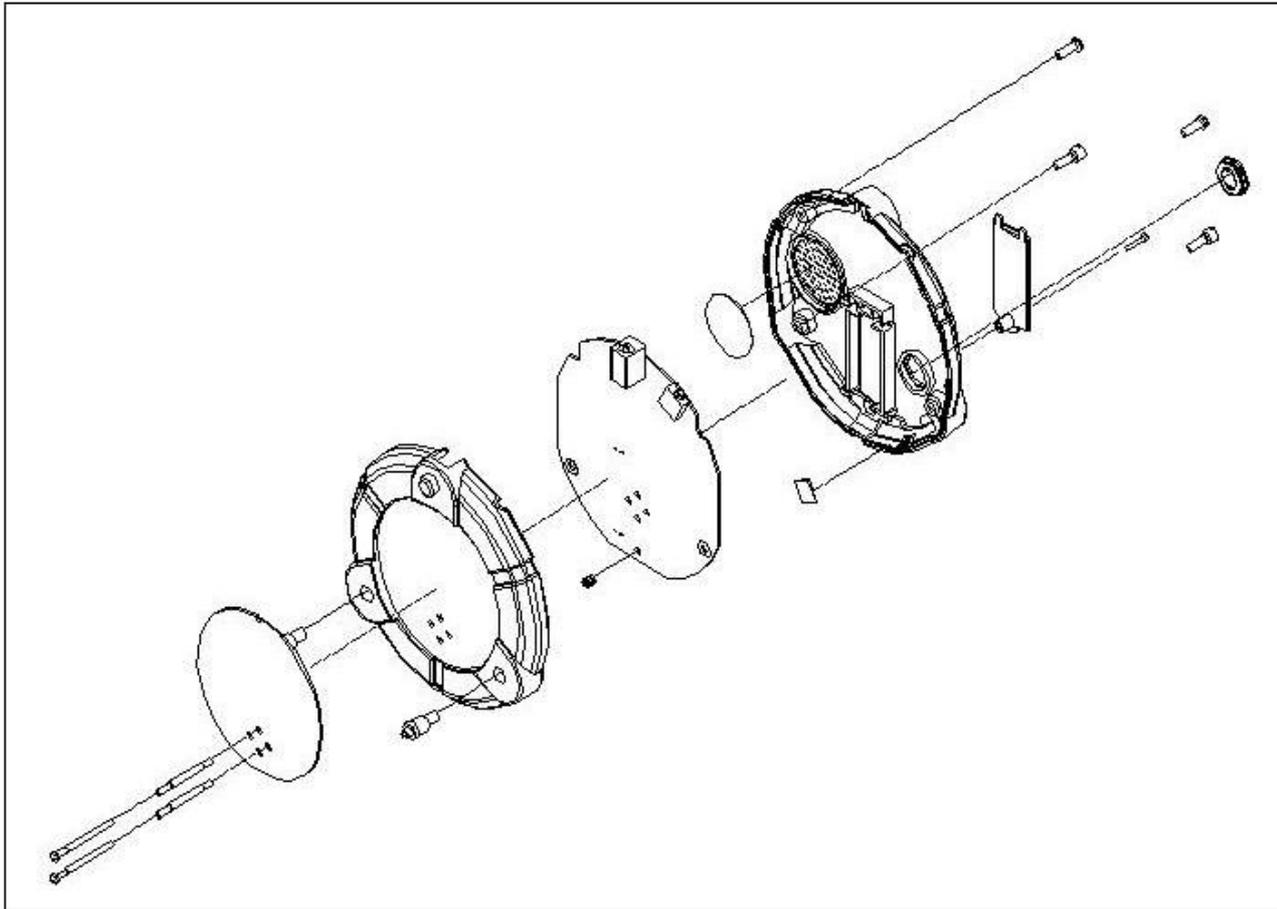
Figure 17. Exploded View Diagram and Parts List

Troubleshooting Guide

Problem	Solution
When I try to read or write to a pager using the GearStar PPS it reports No line-echo detected and won't read the pager.	Check the integrity of the hardware setup. Ensure the Programming Interface cable is connected to an asynchronous communications port. This is usually a 9-pin male connector on the back of the computer. Ensure the Programming Interface power supply cable is properly connected and plugged into an electrical socket. If the power supply is plugged into a power strip, ensure the power strip is turned on. Check that the Serial cable is properly connected to the Pager Mechanical Interface.
When I try to read or write to a pager using the GearStar PPS it reports no acknowledgment received and won't read the pager.	Ensure the pager is placed securely in the Pager Mechanical Interface.
My pagers worked fine, but since I reprogrammed them, they do not page.	There are several possible sources of this problem. Check the following: Ensure the Capcode is correct. Ensure that the code was not inadvertently changed. Ensure the Completely Silent Pager option has not been set to Yes. If it is set to Yes, the pager will receive pages, but never issue an alert.

Default Value

The following screens show the Unication default device parameter settings.
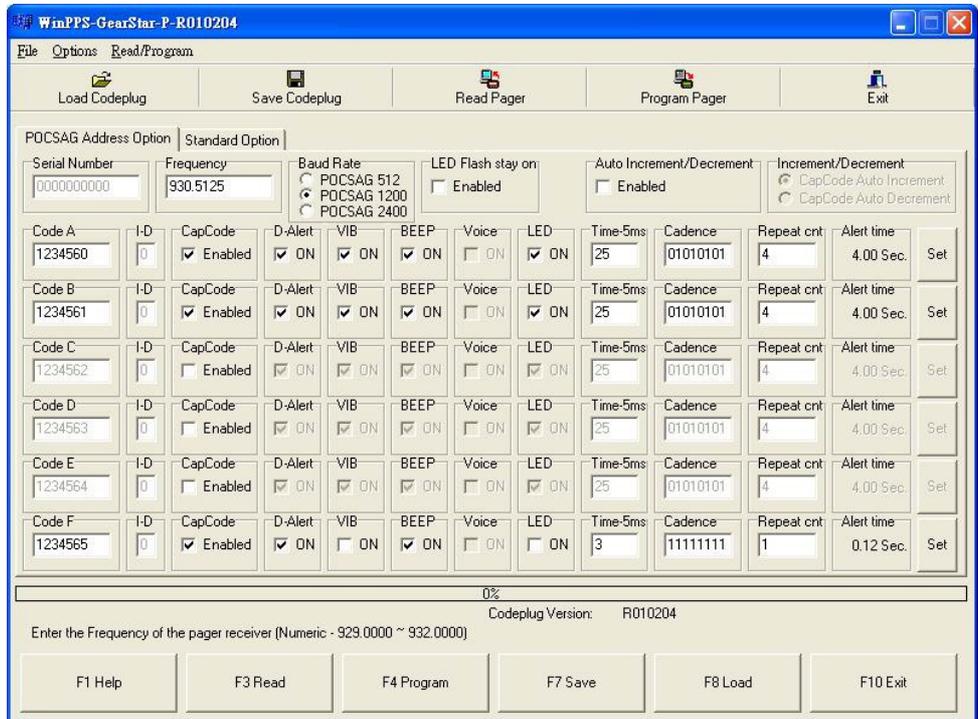
Figure 18. Default Value of POCSAG Address Option
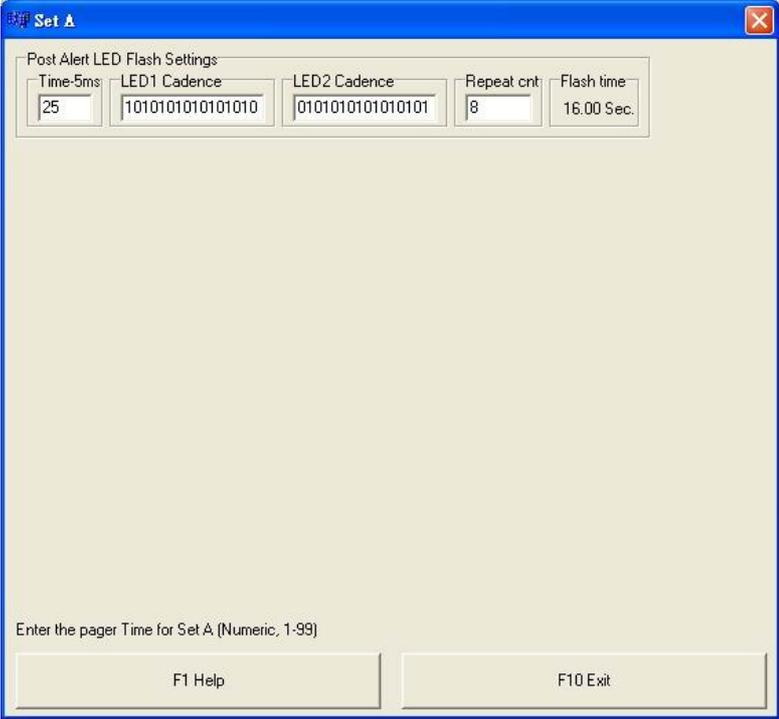
Figure 19. Default Value of Set A/B/C/D/E/F

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Default Value
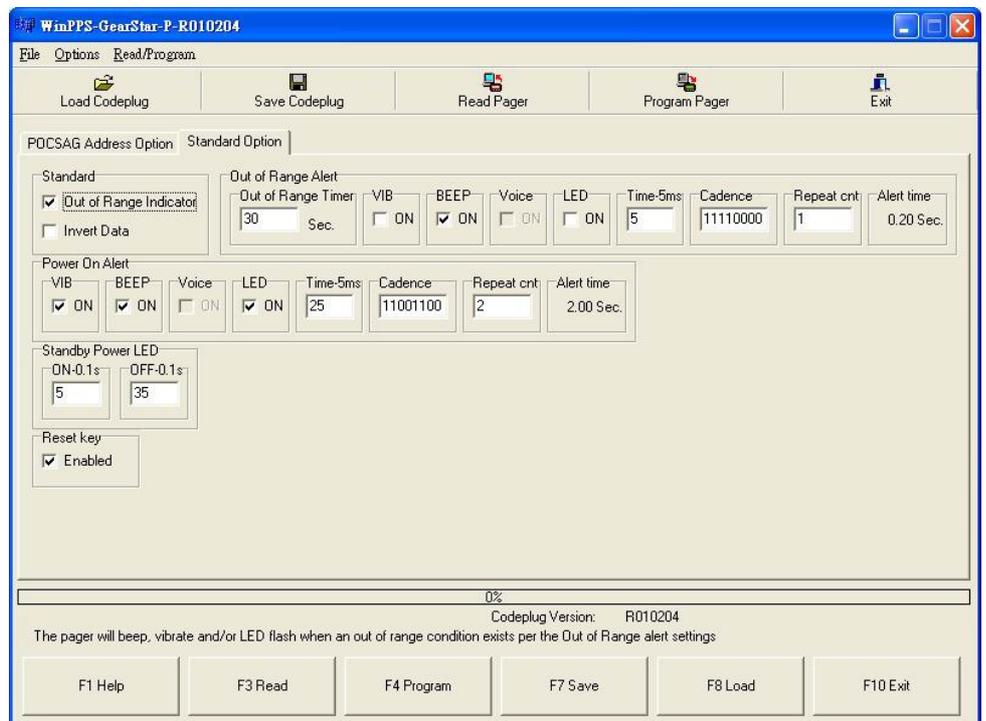
Figure 20. Default Value of Standard Option

Q&A

Q1: How to set correct COM port for PPS?

Ans1:

(A) Before we set PPS COM port, you need to know PPS connect to which COM port.

(B) Because Windows support multi-COM port, so we need to check available COM port for PPS as Q2

(C) If you not sure PPS connected to which COM port, you can try each COM port to find out the correct COM port.

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Q&A

Q2: How to check available COM port for PPS?

Ans2:
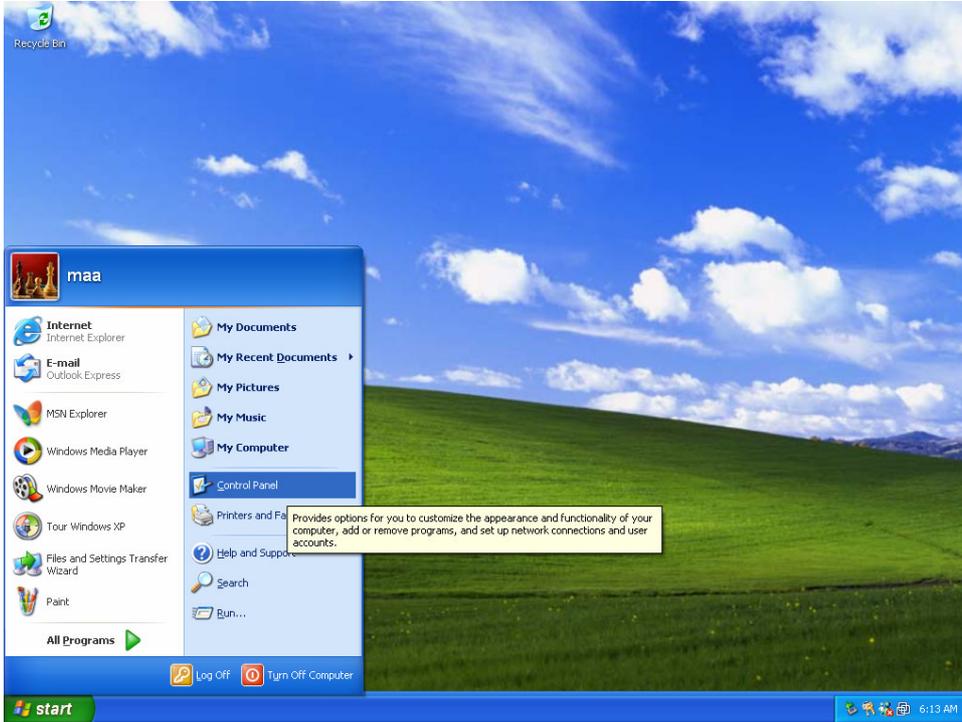
Press "start" button then click "Control Panel" button to display Control Panel
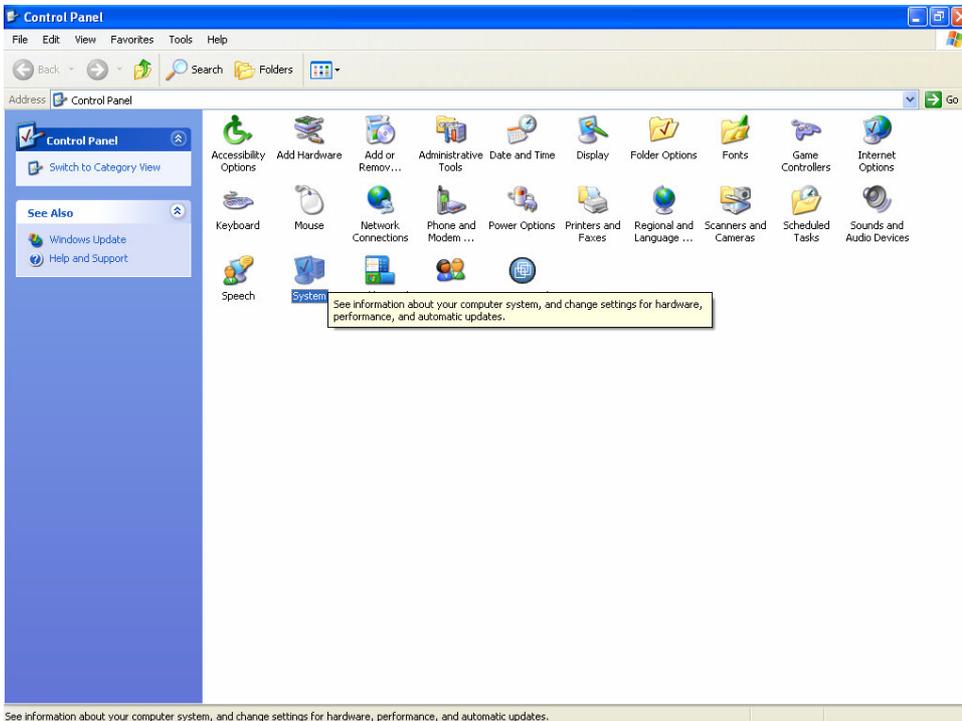
Click "System" ICON to display System Properties
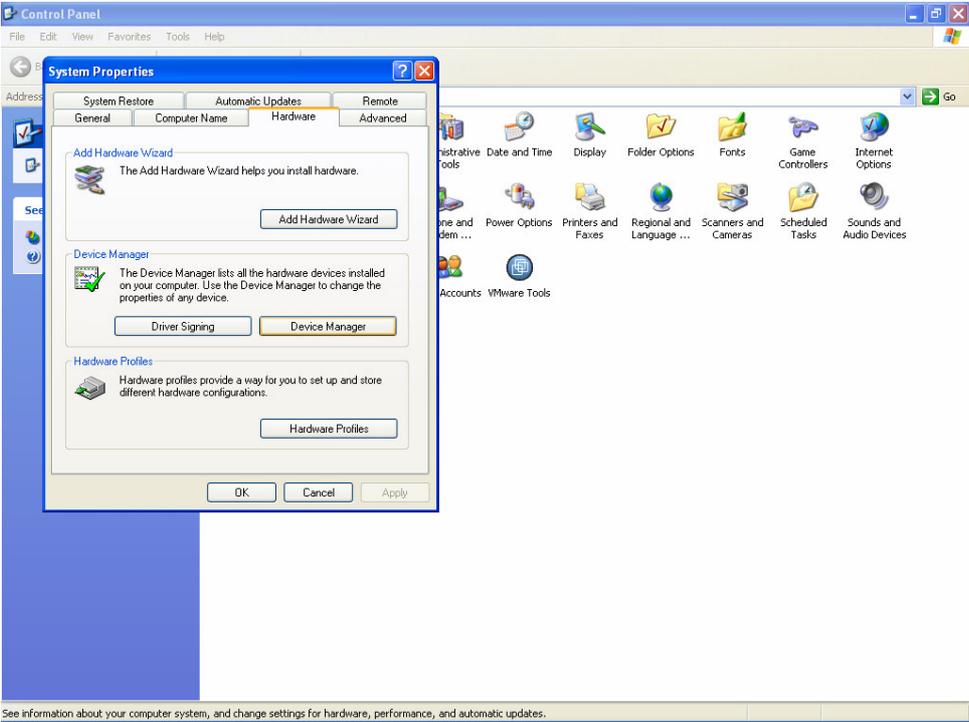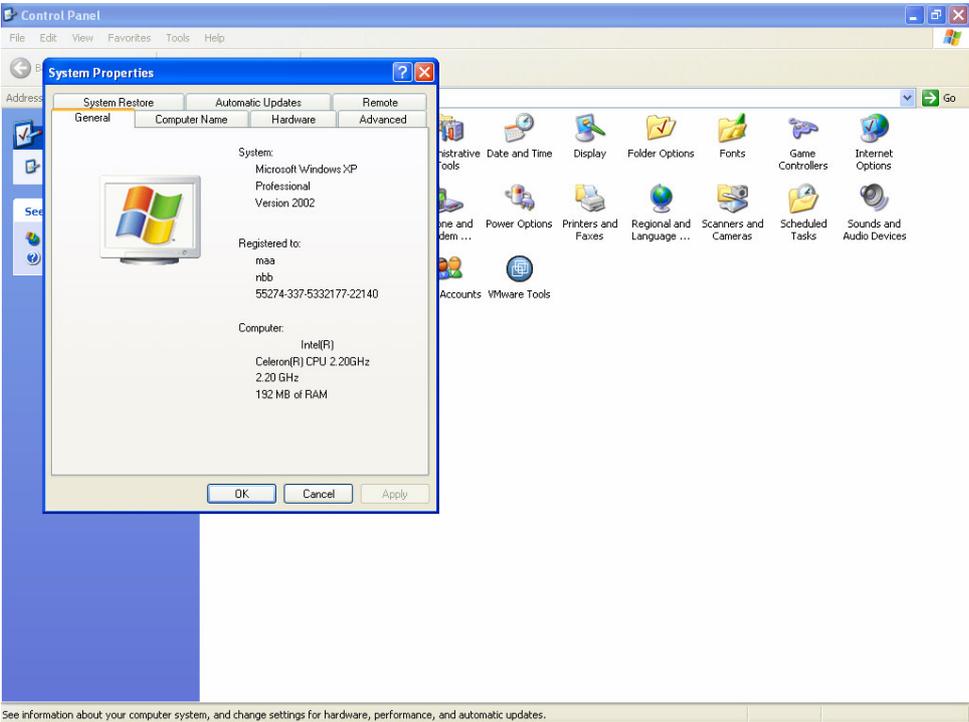
Select "Hardware" button, then press "Device Manager" button to display "Device Manager" box

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Q&A
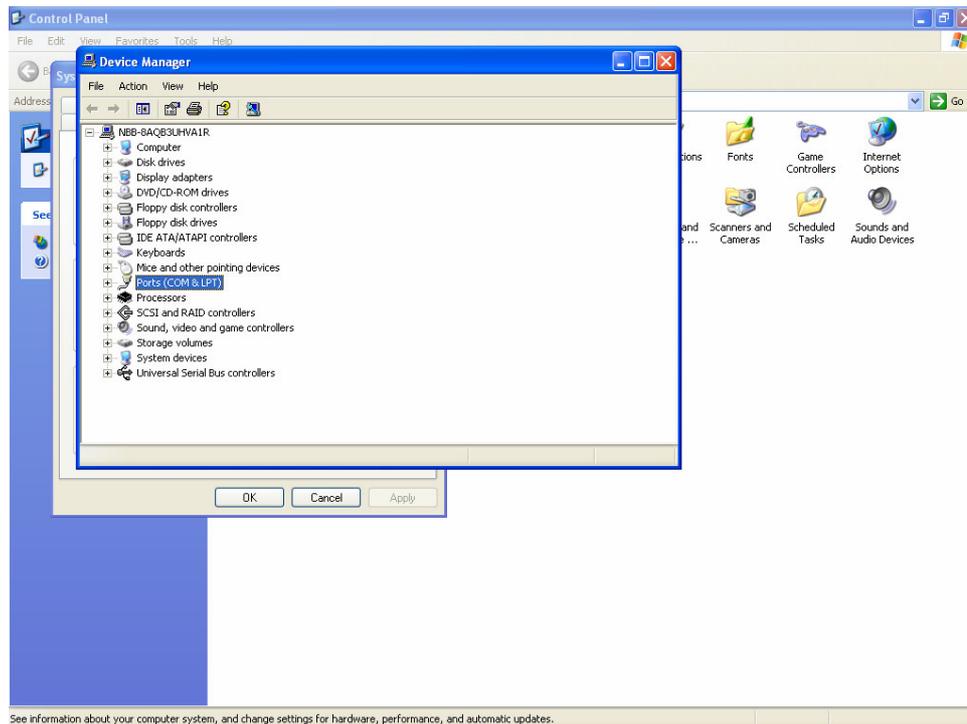
Press "Ports(COM & LPT)" button to expand "Ports (COM & LPT)" list
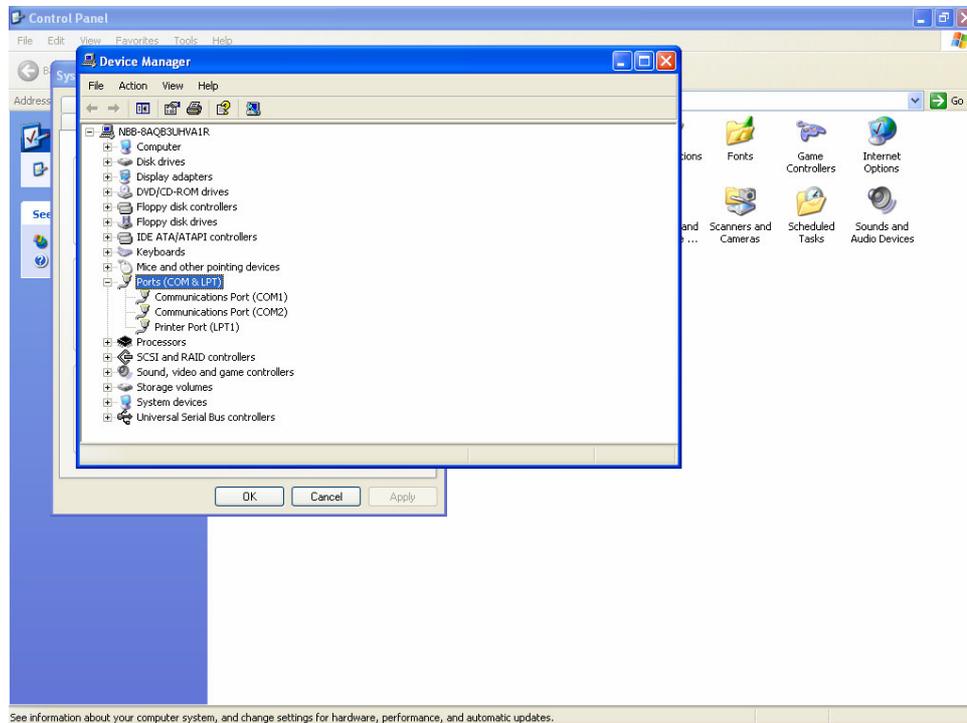
The communication port(COM X)(example COM1,COM2) was windows support COM port.

Press " ⊠ " then click " OK "

Q3: How many COM port did PPS support?

Ans3: PPS support max 16 COM port by default

Q4: How to handle PPS COM port if windows COM port more than 16?

Ans4: You can modify max COM value in GearStarF.ini on working directory.
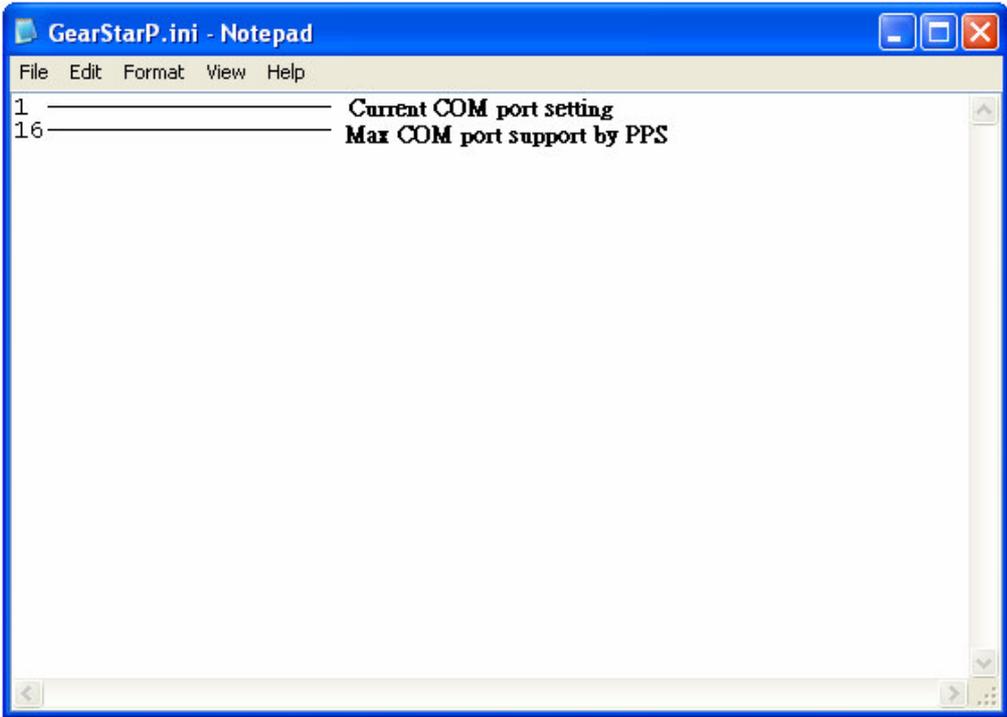
For example, you can change from 16 to 32, to support max 32 COM port.

After this value changed, next time you run PPS to set COM port. The COM port list will have select value from 1~32.

Glossary

Archive File

This is a file containing the current pager configuration information. This file is created from the Save Codeplug Archive command on the File Menu.

Click, Clicking

Click is the action of using the mouse to select an item by pressing the mouse button once, while the item is highlighted or while the cursor is on the item.

Default

A default is information automatically generated by the software program. Basically, any field that contains a preset selection is called a default. Default information can be changed as necessary. It is used to ensure that a basic entry is present for required information.

Desktop

The desktop is the main working area of the window which has the menu bar at the top and the status bar at the bottom of the screen.

Field

An area on the screen where information is entered.

Highlight Bar

The cursor is not represented by a single character space, but instead by a long contrasting bar of color or gray scale.

Menu Bar

The bar across the top of the desktop containing the names of several pull-down menus.

Pager Clock Crystal

A crystal used inside the pager to control the time-keeping function.

Pull-down Menu

A menu that opens when the menu title or topic is selected. You can select it by clicking on the title and "pulling down" on the menu, hence its name.

Sequential

Refers to programming more than one pager.

Toggle

To select/deselect an option or feature