

**ST800 PLUS**  
**numeric flex pager**  
**Pager Program Software v.1.0.0**  
**User Manual**

**2003.10**

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## 1. Software explanation

ST800 PLUS Pager Program Software is to program the EEPROM of ST800 PLUS numeric flex pager. The software can communicate with a pager through JIG connected to the serial port of a computer.

It allows a user to program addresses (capcodes), PLL frequency, various options, canned messages, etc.

The software has a function to let a user preview the write information before writing to a pager and print it out. Also, it has the auto write function so that a user can write a great quantity of pagers automatically. In addition to that, a user is able to read data from a pager and save the data to a file and load the file for future use.

## 2. Installing software

### 2.1 Installing software

Double click on setup.exe file, then Install Wizard starts. Follow the instructions on Install Wizard to install software. After installation a short-cut icon, "ST800 PLUS PPS v.1.0.0", is created on the desktop as well as under **Start>Program**.

### 2.2 System requirements

- CPU: Intel 486 / Pentium or better
- OS: Microsoft Windows 98/ME/NT/2000/XP
- Hard disk space: Approximately 10MBytes
- Monitor resolution: Best at 1024 x 768

## 3. Starting/terminating software

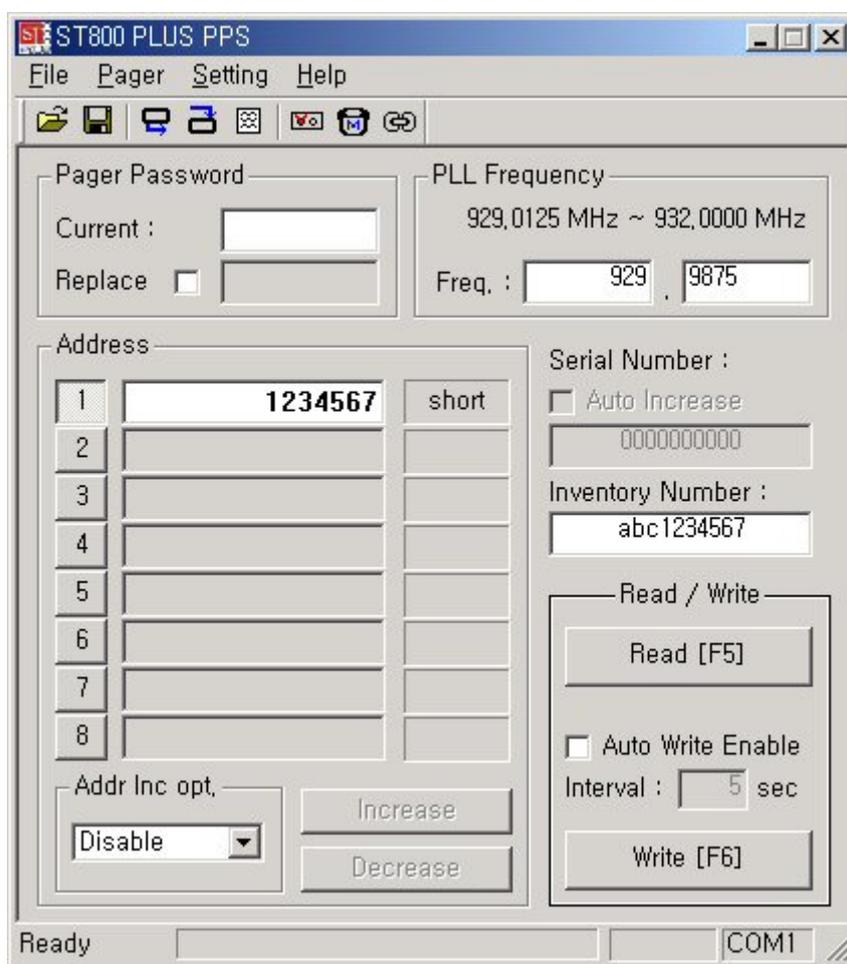
### 3.1 Starting software

After successful installation of software, Windows creates an icon for ST800 PLUS v.1.0.0 on the desktop. Double clicking of the icon starts software. Or, selecting **Start>Program>ST800 PLUS v.1.0.0** starts software, too. First window after starting software is Log In dialog box shown in **<Figure 1>**. Entering proper password and clicking "OK" button allows a user to start the Pager Program Software (PPS). Login password can be combination of characters and numbers. "Cancel" button terminates the Log In dialog box and PPS does not start.

**<Figure 2>** shows the main panel that appears right after clicking "OK" button on the Log In dialog box with the correct password.



<Figure 1>



<Figure 2>

### 3.2 Terminating software

While software is running, "Alt + X", little "x" mark on the right top corner of software, or **File>Exit** terminates software. When terminating software <Figure 3> appears.

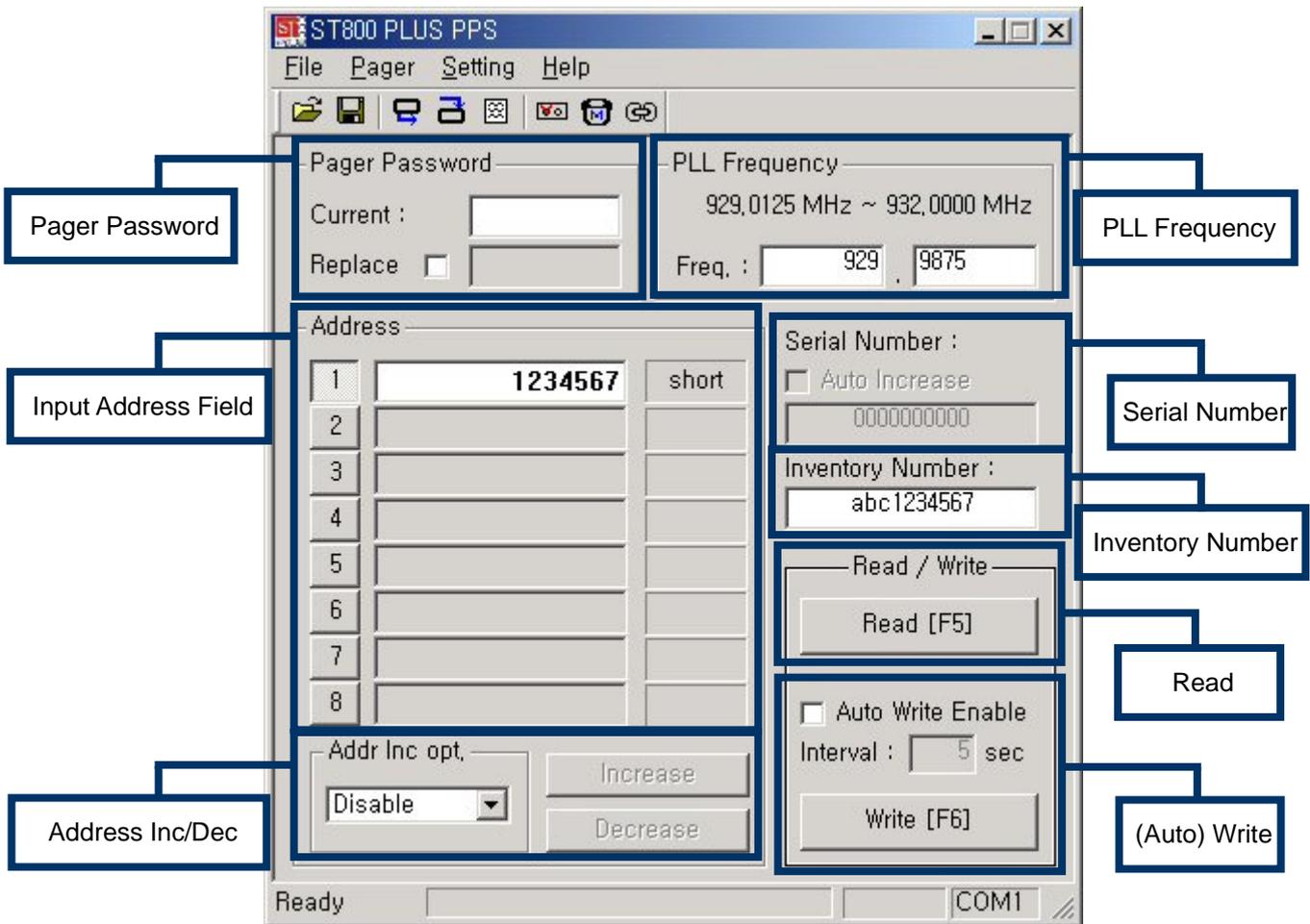


<Figure 3>

Clicking either “Yes” or “No” buttons terminates the software. However, “Yes” button saves the data, whereas “No” button does not. “Cancel” button does not terminate software and go back to the main panel shown in <Figure 2>.

#### 4. Functions

##### 4.1 Main panel



< Figure 4>

Main panel controls address values, address increase/decrease, PLL frequency, serial number, inventory number, auto write options and pager password. <Figure 4> shows the main panel of the software.

#### 4.1.1 Pager Password frame

To be able to write or read to/from a pager, the correct pager password must be specified. Pager password must consist of 4 characters except special characters. Current field must have the correct pager password to write or read to/from a pager. If the pager password needs to be changed, then check on the "Replace". It enables the edit box to get the new pager password.

#### 4.1.2 Address frame

There are eight address (capcodes) fields and a user can use each address field by press the address number in front of the address field. Note that the first address field must be used to be able to write a pager and addresses must be specified sequentially. For example, if a user write a pager after editing address 1, 2, 3, 7 and 8, address 7 and 8 will be deleted and do not work actually.

The range of short address is from 1 to 1,933,312 and from 1,998,849 to 2,031,614, and the range of long address is from 2,101,249 to 4,291,000,000. However, it is recommended not to use from 3,223,326,721 to 4,291,000,000 on the long address range due to FLEX protocol. Short and long address can be entered in any eight address-fields and the kind of address show up on the right of the each address-field. Illegal addresses prompt an error message.

If you select "Address 1" and press "Increase" or "Decrease", then the value of address 1 increases or decreases by one, respectively. Selecting "Another Addr" affects on all the other addresses except address 1. If you select "All Addresses", then all of eight addresses are affected by pressing "Increase" or "Decrease" buttons. While one of these options is selected, after each writing procedure the corresponding addresses are increase by one automatically.

#### 4.1.3 PLL Frequency frame

The range of allowed PLL frequency is from 929.0125 MHz to 932.0000 MHz. The fraction part of the frequency must be divisible by 125. Illegal PLL frequency prompts an error message.

#### 4.1.4 Serial / Inventory Number

Serial Number is ten digits number and is shown after Read or Write operation. Inventory Number consists of 10 characters, and is for input of inventory number of pager. Inventory Number is not used at present and just filled with default value "abc1234567". If the length of inventory number is less than 10, "0" characters are added to front part of the inventory number.

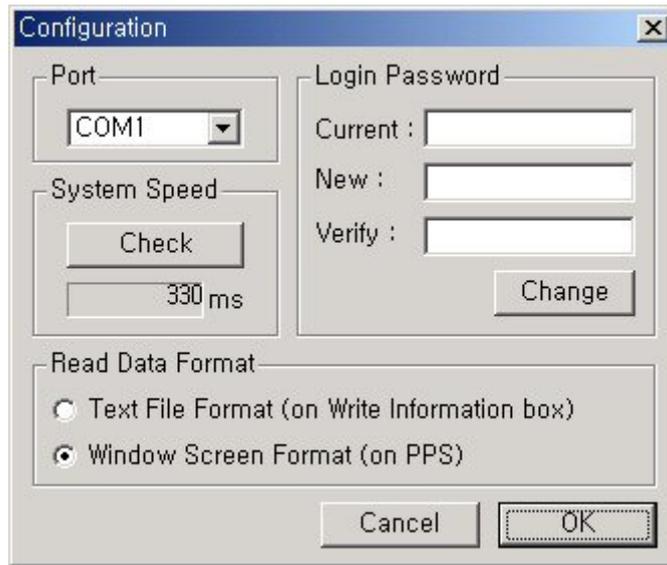
#### 4.1.5 Read / Write frame

Clicking "Read [F5]"/"Write [F6]" button proceeds read/write operation. It is another way of executing **Pager>Read (F5) / Pager>Write (F6)**. Checking "Auto Write Enable" changes the text of the "Write [F6]" button to "Auto Write [F7]". While auto writing, this button turns into "Stop [F7]" button that is to stop auto writing. "Interval" means the time that takes from the end of writing to one pager to the beginning of writing to another

pager. A user has to input "Interval" in seconds before auto writing.

#### 4.2 Configuration panel

Executing **Setting>Configuration...** of menu or clicking configuration icon of tool bar shows configuration panel <Figure 5>. Configuration panel controls the environment of software. To save the modification and exit click "OK" button. "Cancel" button exits without saving the modification.



< Figure 5 >

##### 4.2.1 Port frame

Select COM port to use serial port to communicate with a pager. COM port can be selected from COM1 to COM20. When a user selects COM port, simultaneously the selected port is opened. If the selected port is unavailable on the computer or preoccupied by another software, an error message occurs.

##### 4.2.2 System Speed frame

Clicking "Check" button measures standby time to optimize communication environment. Maintaining the connection with a pager, click "Check" button and wait. If "System Speed has been checked successfully!" message shows up and measured system speed updated in the box below the "Check" button, it is succeeded. The unit of system speed is millisecond. If it is failed, the message box "Fail to check system speed! Please try again!" shows up. At this time, try again after checking the COM port, direction of the JIG, the contact point of JIG, etc.

A user does not have to check system speed in any case. The default value 330 is enough to execute read/write operations. Once getting the system speed value on the computer in which the software was installed, it is not necessary to check again.

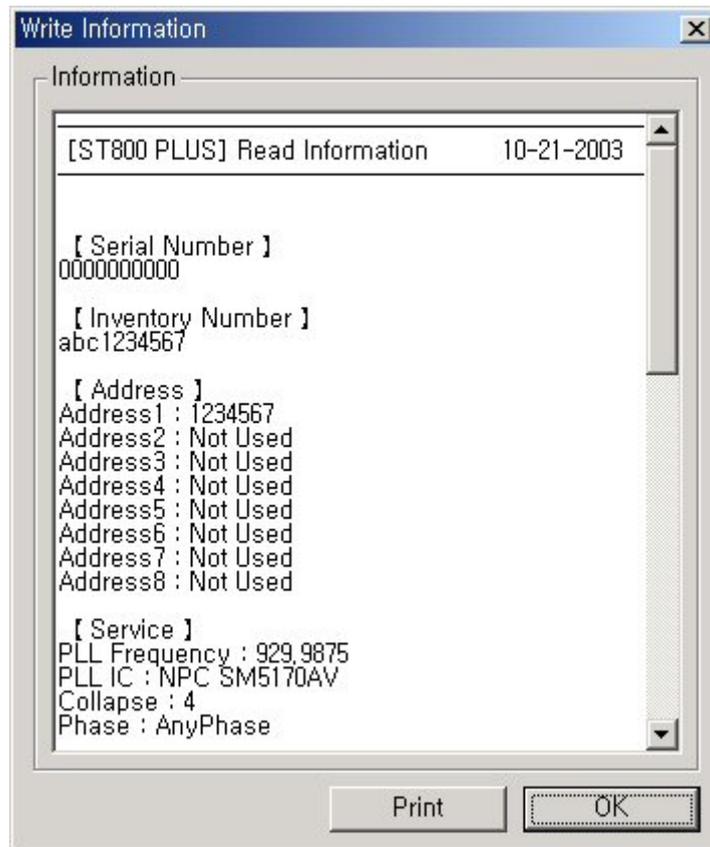
### 4.2.3 Log In Password frame

To change the log in password, it must be done on this frame. Enter the current password on “Current” field and the new password on “New” and “Verify” fields. They must not contain ‘:’, ‘/’ and ‘\$’ characters. New password and verify password must be the same. After writing passwords, click “Change” button to change the password.

### 4.2.4 Read Data Format frame

This option decides how to display the read data from a pager when the Read command is executed. If “Text File Format” is selected, the read data is displayed in the Write Information box shown in **<Figure 6>**. As shown in **<Figure 6>** there is a “Print” button. Clicking this button makes a hard copy via a printer. Click “OK” button to close this window. Once this window is closed, the “Read Information” is not available until reading again.

If “Window Screen Format” is selected, then the read data is applied to directly on UI Screen (Main panel, Option panel and Canned message panel).

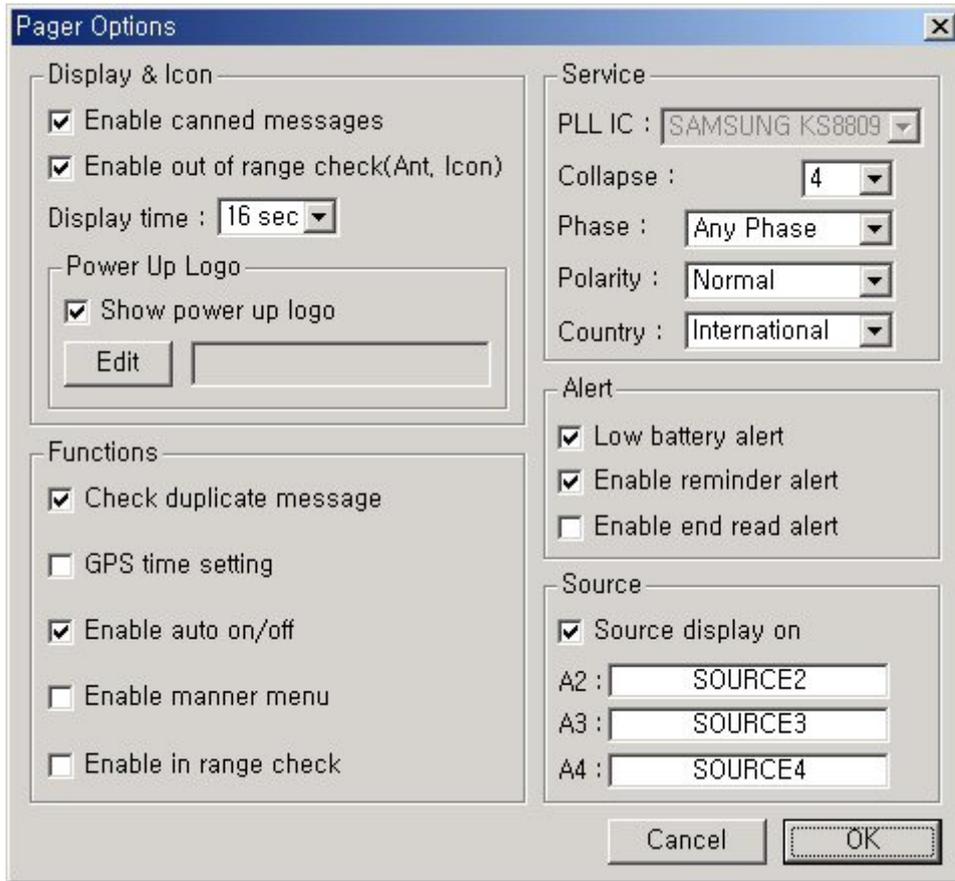


< Figure 6 >

## 4.3 Pager Options panel

Executing **Setting>Option...** of menu or clicking option icon of tool bar shows Pager Options panel **<Figure 7>**. Pager Options panel controls various functions of a pager. To save the modification and exit click “OK” button.

“Cancel” button exits without saving the modification.



< Figure 7 >

### 4.3.1 Display & Icon frame

It is able to set whether show Canned Message, Out of Range check(antenna icon) and Power Up Logo or not. Also, Power Up Logo can be edited and Display time value can be selected. Power Up Logo can be up to 12 characters, which consists of alphabet, number, '-', ':', '[', ']', or space and is displayed center aligned in the LCD of a pager automatically.

### 4.3.2 Functions frame

It is to set Check duplicate message, GPS time setting, Auto on/off, Manner menu and In range check functions.

### 4.3.3 Service frame

Select Collapse value, Phase, Polarity and Country. A pager uses SAMSUNG KS8809 or NPC 5170AV as a PLL IC in it. It is no use selecting the kind of PLL IC, because the software automatically aware of PLL IC manufacturer and set the relative write information before writing. After writing is done, the actual written PLL IC is shown in the PLL IC combo box. For reference, PLL IC is SAMSUNG KS8809 when the PCB of a pager is

green and NPC 5170AV when blue.

#### 4.3.4 Alert frame

It is to set Low battery alert, Reminder alert and End read alert functions.

#### 4.3.5 Source frame

Set whether a pager shows Source or not and edit Source 2, 3 and 4. Source can be up to 11 characters, which consists of alphabet, number, '-', ':', '[', ']', or space and is displayed center aligned in the LCD of a pager automatically.

### 4.4 Canned Messages panel

Executing **Setting>Canned Message...** or clicking canned message icon shows Canned Messages panel <Figure 8>. To save the modification and exit click "OK" button. "Cancel" button exits without saving the modification.



< Figure 8 >

#### 4.4.1 Canned Messages frame

Canned Message can be up to 12 characters, which consists of alphabet, number, '-', ':', '[', ']', or space and is

displayed center aligned in the LCD of a pager automatically.

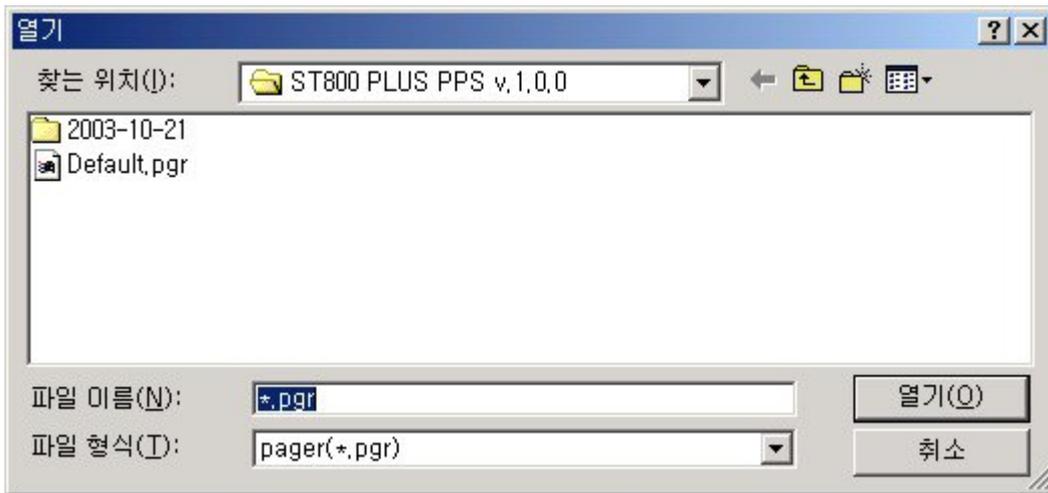
#### 4.5 Menu bar, Tool bar and Status bar

##### 4.5.1 File menu

File Menu consists of six sub-menus: Open, Save, Save As, Print, Print Setup and Exit.

##### 4.5.1.1 Open

Open menu loads the file with the file extension of \*.pgr. The file is loaded in Window Screen Format. Clicking "Open" menu prompts an Open File Dialog box shown in **<Figure 9>**.

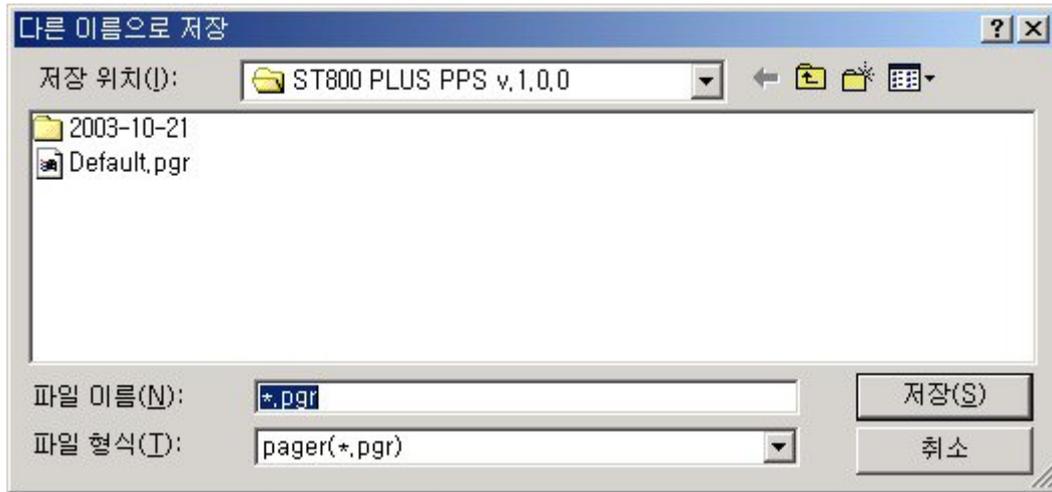


**< Figure 9 >**

##### 4.5.1.2 Save and Save As

Save menu saves the data to a \*.pgr file which is opened or saved right before. If there is no \*.pgr file opened or saved, Save As File Dialog box similar to **<Figure 10>** appears. The saved file can be called by Open menu for future use.

Clicking Save As menu always prompts Save As File Dialog box similar to **<Figure 10>**.



< Figure 10 >

#### 4.5.1.3 Print

Print menu enables a user to print the current write information without executing write information box.

#### 4.5.1.4 Print Setup

Print Setup menu set the printing environment of a local or network printer.

#### 4.5.1.5 Exit

Clicking "Exit" menu terminates software. Before terminating software it prompts a window shown in **<Figure 3>**

### 4.5.2 Pager menu

Pager menu consists of four sub-menus: Read, Write, Auto Write and Write Info.

#### 4.5.2.1 Read

Read menu reads the data from a pager when the EEPROM of a pager is not blank. This menu can be executed by pressing "F5" or "Ctrl+R", also. To read the data from a pager, the pager password must match with the password the pager holds. The progress bar on the main panel shows how much of the reading has been done. During the reading procedure "READ..." is displayed on the status bar of the main panel. If the reading is successful, then "DONE" is displayed on the status bar of the main panel; whereas it displays "FAILURE" and a separate error message window for failure of reading. After successful reading, it displays the data according to the Read Data Format option from Configuration panel.

In the cases of Power Up Logo, Source and Canned Message strings after read operation, 'Z', 'z' and '2' are displayed in 'Z', 'G', 'g' and '9' are displayed in 'G', 'C', 'c' and '[' are displayed in 'C', 'S', 's' and '5' are displayed in 'S', 'U', 'u', 'V' and 'v' are displayed in 'U' and '0', 'O' and 'o' are displayed in 'O'. These results are

cause by the segment code value of a pager LCD. Some ASCII codes have the same pager segment value and this is not error.

#### 4.5.2.2 Write

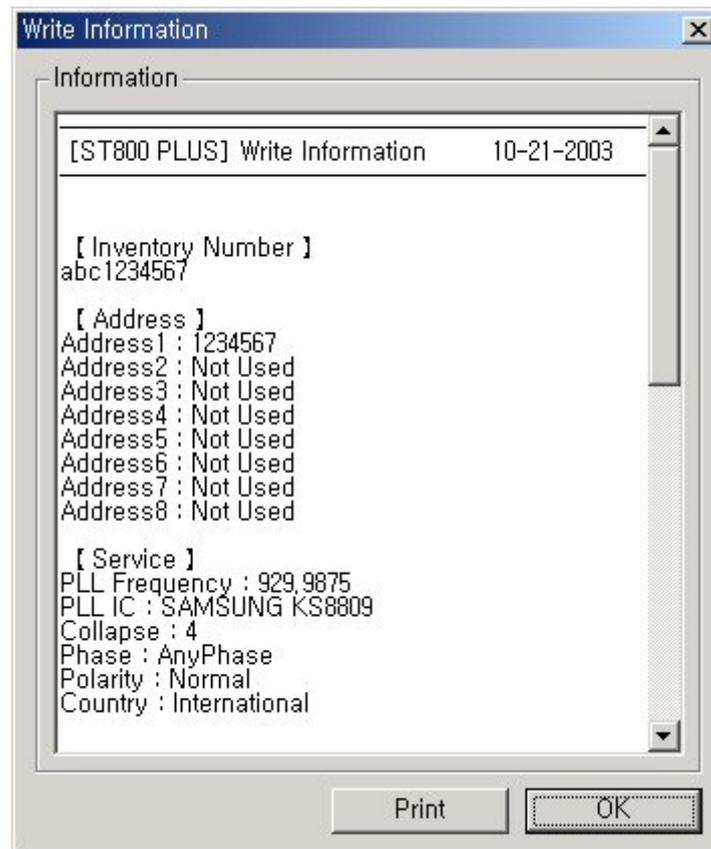
Write menu writes the data to a pager when the EEPROM of a pager is not blank. This menu can be executed by pressing "F6", "Ctrl+W" or "SPACE BAR", also. Before writing the data to a pager, software checks if there are any invalid values on Address, PLL Frequency and Pager PW frames. The progress bar on the main panel shows the how much of the writing has been done. During the writing procedure, "WRITE..." is displayed on the status bar of the main panel. Like reading procedure, for successful writing it displays "DONE" on the status bar of the main panel; whereas it displays "FAILURE" and a separate error message window for failure of writing.

#### 4.5.2.3 Auto Write

Auto Write menu writes a pager automatically every specified interval on the Main panel. This menu can be executed by pressing "F7". Clicking the menu one more time stops the auto write procedure. Also, disconnecting the pager from a PC stops the auto writing procedure. While writing a pager, the progress bar on the main panel moves and the status bar displays "AUTO...". When it is done it displays "DONE" for successful writing or "FAILURE" and a separate error message window for failure of writing. Therefore, change a pager to the next when "DONE" is displayed on the status bar of the main panel.

#### 4.5.2.4 Write Info

Write Info menu displays the data to be written to a pager on the Write Information box shown in **<Figure 11>**. As shown in the **<Figure 11>**, there are two buttons: "Print" and "OK". Clicking "Print" button makes a hard copy via a printer. "OK" button closes the box.



< Figure 11 >

### 4.5.3 Setting menu

Setting menu consists of three sub-menus: Option, Canned Message and Configuration.

#### 4.5.3.1 Option

Option prompts Pager Options panel. See 4.3.

#### 4.5.3.2 Canned Message

Canned Message prompts Canned Messages panel. See 4.4.

#### 4.5.3.3 Configuration

Configuration prompts Configuration panel. See 4.2.

### 4.5.4 Help menu

Help menu consists of one sub-menu: About ID Writer.

#### 4.5.4.1 About ID Writer

This menu prompts the about box for software shown in <Figure 12>. It includes version and copyright

information.



< Figure 12>

#### 4.5.5 Tool bar

The Tool bar of ST800 PLUS PPS is shown in <Figure 13>. It has eight icons.

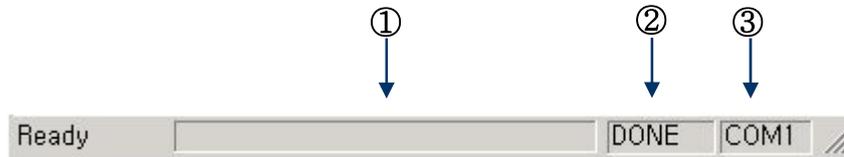


< Figure 13>

From the left they are Open, Save, Read, Write, Write Info, Option, Canned Message and Configuration. This allows a user to select one of those eight listed menus in quicker way.

#### 4.5.6 Status bar

Status bar displays several pieces of information. It is located on the bottom of the main panel (see <Figure 14>).



< Figure 14>

- ① : Progress bar (It shows the how much of reading or writing from/to a pager is done so far.)
- ② : The first pane displays "WRITE..." during writing, "READ..." during reading and "AUTO..." during auto writing. When the operation is done successfully, it displays "DONE". When the operation failed, it displays "FAILURE".
- ③ : The second pane displays the connection information.  
COM#: COM port(port number #) is opened.  
CLOSE: COM port is closed.

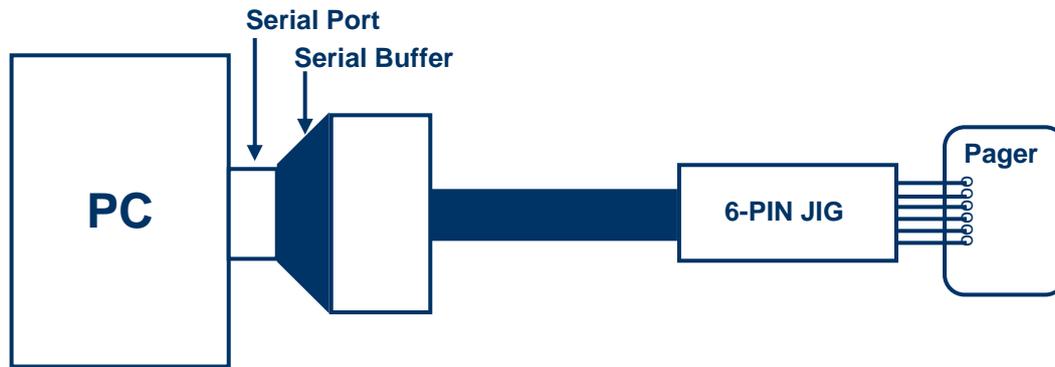
## 5. Trouble Shooting

Error message number	Contents	Reason and Response
<b>Error 101</b>	Incorrect LogIn password!	- <b>Reason:</b> Incorrect current LogIn password is given. - <b>Response:</b> Look out <Caps Lock> key and enter the correct LogIn password.
<b>Error 103</b>	Pager password must consist of 4 characters!	- <b>Reason:</b> Pager password is not given, or it is not 4 characters. - <b>Response:</b> Given the 4-character pager password.
<b>Error 104</b>	This is blank pager!	- <b>Reason:</b> There is no data on EEPROM of a pager. - <b>Response:</b> Bring the pager to the factory.
<b>Error 105</b>	First Address must be used!	- <b>Reason:</b> Tried to write to a pager, save write information to a file or execute Write Info with empty first address. - <b>Response:</b> Enter address on the first Address field
<b>Error 106</b>	Illegal Address values in Address ...	- <b>Reason:</b> Tried to write to a pager, save write information to a file or execute Write Info with illegal addresses. - <b>Response:</b> Check range of address and enter again.
<b>Error 107</b>	Illegal PLL Frequency!	- <b>Reason:</b> Tried to write to a pager, save write information to a file or execute Write Info, after entering illegal PLL frequency value. - <b>Response:</b> Check the range and the fraction part of PLL frequency.
<b>Error 108</b>	New and Verify passwords do not match!	- <b>Reason:</b> New and verify passwords are different for changing login password. - <b>Response:</b> Make sure they are the same.
<b>Error 109</b>	'\$', '/' and ':' are illegal characters!	- <b>Reason:</b> Illegal characters are entered in the login password field. - <b>Response:</b> Delete illegal characters.
<b>Error 111</b>	Check missing values!	- <b>Reason:</b> If there is blank field in the Pager Options panel. - <b>Response:</b> Exit and delete "info.ini" file in the software folder.
<b>Error 112</b>	Invalid characters are found in message ...	- <b>Reason:</b> Invalid characters are entered in the canned message field. - <b>Response:</b> Delete invalid characters.
<b>Error 113</b>	Incorrect pager password!	- <b>Reason:</b> Given pager password does not match with the password the pager holds. - <b>Response:</b> Give the correct pager password. If it failed, contact with company.
<b>Error 114</b>	Blank pager! Only power user can access to	- <b>Reason:</b> Tried to do read or write operation to a blank pager, of which has no data on EEPROM.

	the blank pager!	<b>-Response:</b> Bring the pager to the factory.
<b>Error 115</b>	Unavailable pager character found!	<b>-Reason:</b> Invalid characters are entered in Power Up Logo or Source. <b>-Response:</b> Enter valid string consists of alphabet, number, '-', '[', ']', ':', or space.
<b>Error 201</b>	Loading the file failed! Make sure the file is for ST800 PLUS.	<b>-Reason:</b> Specified file is not for ST800 PLUS. <b>-Response:</b> If this error message appeared during opening *.pgr file, Make sure the file is for ST800 PLUS. If during starting the software, exit and delete both info.ini file and config.ini file in the software folder.
<b>Error 301</b>	Fail to initialize COM port!	<b>-Reason:</b> Another program that is using the same COM port is running or the selected COM port is unavailable on the computer. <b>-Response:</b> For the former, terminate that program or choose another COM port. For the latter, select available COM port. Refer to Start>Setting>Control panel>System>Hardware>Device manager>Ports>Communications port (in case of Win2k)
<b>Error 302</b>	Fail to check system speed! Please try again!	<b>-Reason:</b> A user selected unavailable COM port or the contact condition of JIG with a pager is not good. <b>-Response:</b> Select an available COM port or check the contact point.
<b>Error 304</b>	Error while creating ThreadWatchComm, COM#	<b>-Reason:</b> Error for using serial port <b>-Response:</b> Make sure the selected COM port is not preoccupied by another software and restart the software.
<b>Error 305</b>	Timeout! Or, bad connection!	<b>-Reason:</b> When the connection is not good. <b>-Response:</b> Check the contact point and try again.
<b>Error 306</b>	Serial port queue is full!	<b>-Reason:</b> Error for using serial port <b>-Response:</b> Exit software and start again
<b>Error 310</b>	Received EEPROM data is corrupted!	<b>-Reason:</b> While reading a pager, read-done data have faults or the pager was programmed with old version PPS in the past. <b>-Response:</b> Check the connection and try read operation again. If the same error appears, write to a pager and read again. If the same problem still exists, contact with the company.

## 6. Hardware connection

### 6.1 Serial port



## 7. Contact Info

### Company

#### Sun Telecom International

(678) 720-0303

(678) 720-0302 (Fax)

(800) 811-8032 (Toll Free)

[www.suntelecom.com](http://www.suntelecom.com)

### Developer

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