

***ST800 FLEX Numeric  
Pager Program Software v.2.4  
User's Manual***

2003. 3.

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## 1. Software explanation

This software is to program ST800 FLEX Numeric pager. It is upgraded from the previous version of the software. Unfortunately, this software is not down-compatible due to many changes of the software. The software allows a user to program addresses (Capcodes), PLL frequency, various options, signal phase and collapse value.

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.

The most upgraded feature on this version of software is to utilize both of parallel (LPT) and serial (COM) ports to communicate with a pager. For parallel port (LPT) it allows a user to select either LPT1 or LPT2. For serial port (COM) it has a range of choices from COM1 to COM20.

## 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 FLEX PPS v.2.4', is created on the desktop as well as under Start → Program.

### 2.2 System requirement

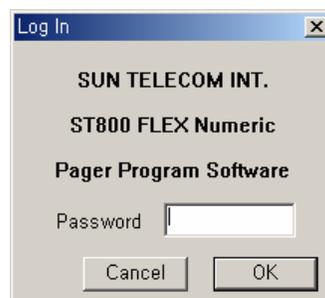
- Processor: Intel 486 or Pentium or better
- OS: Windows 95/98/2000/XP/ME, Windows NT 3.1 or later
- Hard disk space: Approximately 10MBytes
- Monitor resolution: Best at 1024 x 768

## 3. Starting/terminating software

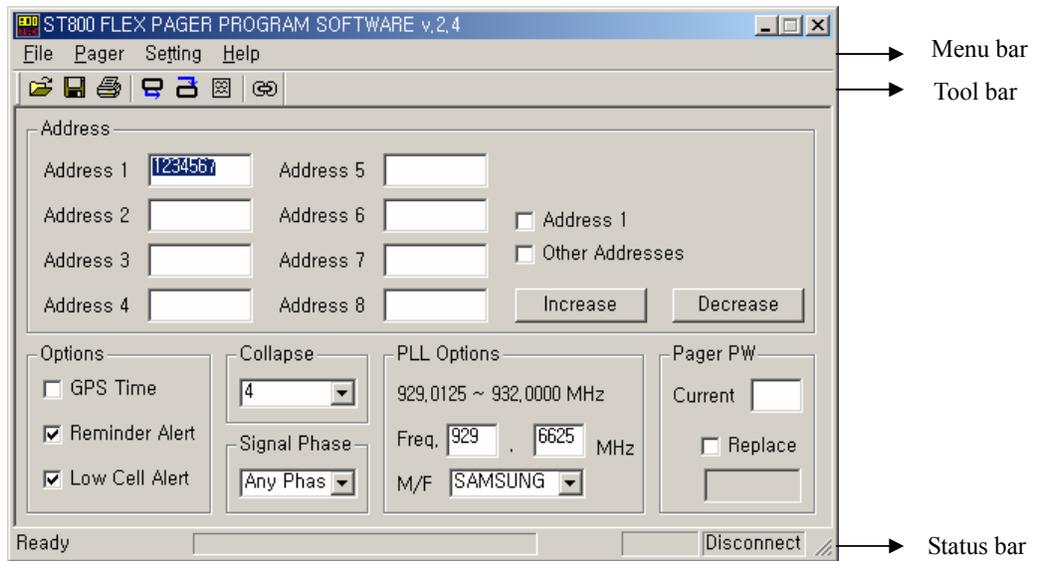
### 3.1 Starting software

After successful installation of software Windows creates an icon for ST800 FLEX v.2.4 on the desktop. Double clicking of the icon starts software. Or, selecting Start → Program → ST800 FLEX v.2.4 starts software, too. First window after starting software is Log In dialog box shown in <Figure 3.1>. Entering proper password and clicking "OK" button allows to start the Pager Program Software (PPS). Login password can be up to combination of 10 characters and numbers. "Cancel" button terminates the Log In dialog box and PPS does not start.

<Figure 3.2> shows the main panel that appears right after clicking "OK" button on the Log In dialog box with the correct password.



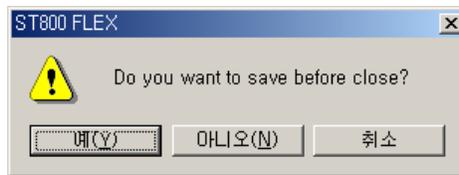
<Figure 3.1> Log In dialog box



<Figure 3.2> Main panel

### 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 3.3> appears.



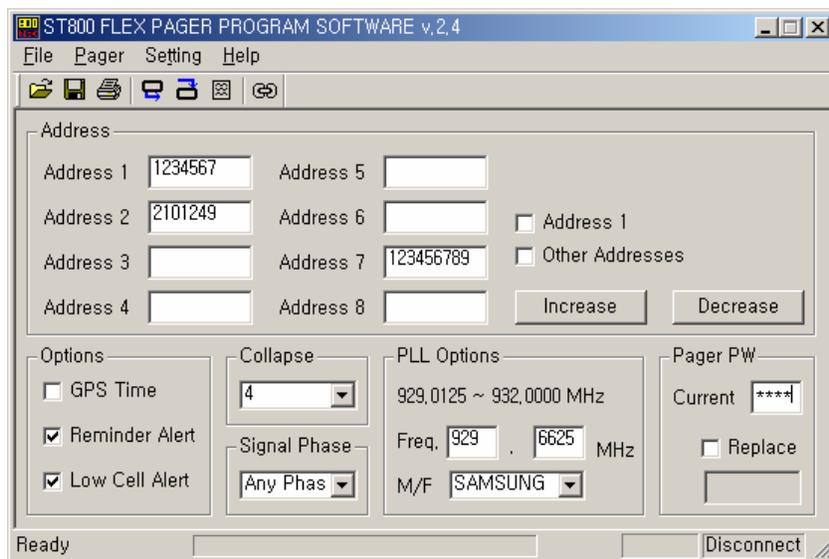
<Figure 3.3> Exit window

Clicking either “Yes” or “No” buttons terminate 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 3.2>.

## 4. Functions

### 4.1 Main panel

Main panel controls address (Capcode), options, collapse value, signal phase, PLL options and pager password. <Figure 4.1> shows the main panel of software.



&lt;Figure 4.1&gt; Main panel

#### 4.1.1 Address frame

Address frame can set total eight addresses (Capcodes). The range of short Capcode is from 1 to 1933312 and from 1998849 to 2031614, and the range of long Capcode is from 2101249 to 4291000000. However, it is recommended not to use from 3223326721 to 4291000000 on the long Capcode range due to FLEX protocol. Short and long Capcode can be entered in any eight address-fields. Note that the first Address field must be used to be able to write a pager. Illegal Capcodes prompt an error message.

If you check on “Address 1” and press “Increase” or “Decrease”, then the value of Address 1 increases or decreases by one, respectively. Checking “Other Addresses” affects on all the other addresses except Address 1. If you check on both, then all of eight addresses are affected by pressing “Increase” or “Decrease” buttons. While this check box(es) is(are) selected, after each writing procedure the corresponding addresses are increase by one automatically.

Caution: Capcodes must be specified sequentially. For example, on the <Figure 4.1> Address 7 is specified with empty Capcodes of Address 3, 4, 5 and 6, so Address 7 will not work.

#### 4.1.2 Options frame

There are three options for ST800 FLEX pager: GPS Time, Reminder Alert, Low Cell Alert.

- GPS Time: Enables/disables GPS time (default: unchecked)
- Reminder Alert: Enables/disables reminder alert (default: checked)
- Low Cell Alert: Enables/disables low cell alert (default: checked)

#### 4.1.3 Collapse frame

It sets the value of collapse. This value is related to the battery life. The range of the value is from zero to seven. (default: four)

#### 4.1.4 Signal Phase frame

It sets the signal phase for a pager. There are five options: Any Phase, Phase A, Phase B, Phase C and Phase D. It is recommended not to change this value unless you are sure to do so. (default: Any Phase)

#### 4.1.5 PLL Options 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. M/F field is to select PLL manufacturer.

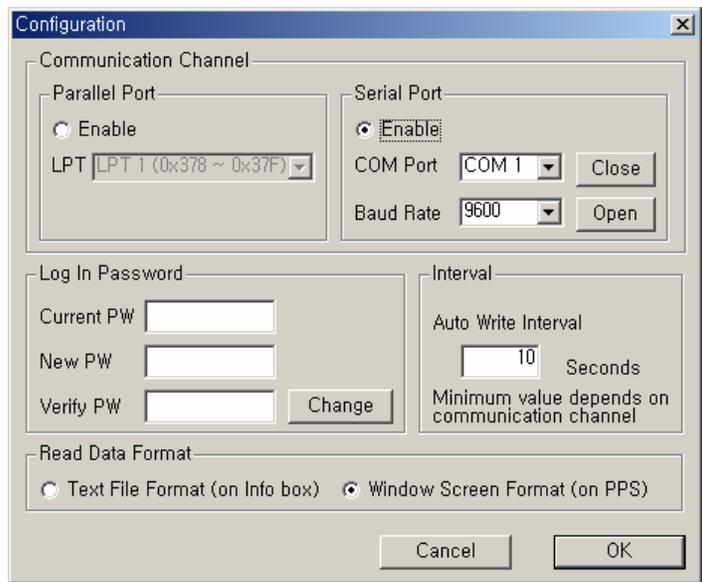
There are two options: Samsung and NPC5170. (default freq: 929.6625 MHz, default M/F: Samsung)

4.1.6 Pager PW 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 numbers. 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", then the edit box is enabled to get the new pager password.

4.2 Configuration panel

Configuration panel controls the environment of software. <Figure 4.2> shows the configuration panel. To save the modification and exit click "OK" button. "Cancel" button exits without saving the modification.



<Figure 4.2> Configuration panel

4.2.1 Parallel Port frame

To use parallel port for the connection between a pager and a PC, select Parallel Port. Then, LPT is enabled and it can be chosen between LPT1 and LPT2.

4.2.2 Serial Port frame

Select Serial Port to use serial port to communicate with a pager. To use serial port COM port and Baud Rate must be set properly. COM port can be selected from COM1 to COM20. Baud Rate has the options of 9600, 19200, 38400, 57600 and 128000. Since the current version of serial port buffer supports only Baud Rate of 9600, it must be set to 9600. Serial port can be closed and opened manually with the "Open" and "Close" buttons.

4.2.3 Log In Password frame

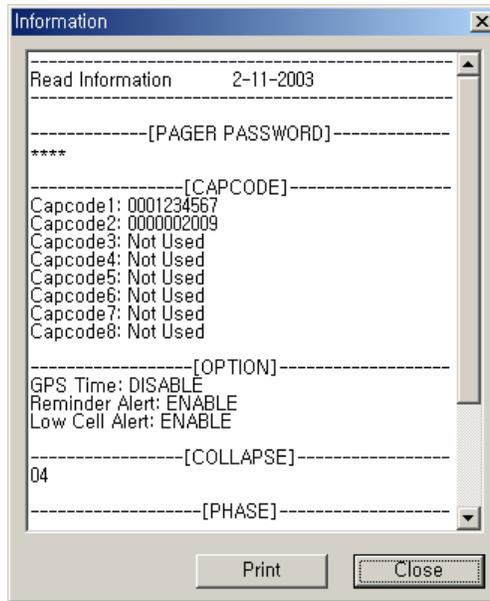
To change the log in password, it must be done on this frame. Enter the current password on Current PW field and the new password on New PW and Verify PW fields. They must not contain ':', '/' and '\$' characters. New password and verify password must be the same. Password can be up to 10 characters or numbers. After writing passwords, click "Change" button to change the password.

4.2.4 Interval frame

Auto Write Interval sets the interval value when Auto Write function is used. For example if auto write interval is set to 10, then it writes a pager every 10 seconds. Note that this value must be greater than the time duration of writing a pager. For serial port the minimum value is 10; and for parallel port the minimum value is 3.

4.2.5 Read Data Format

This option decides how to display the read data from a pager when the Read command is executed. If Text File Format is selected, then the read data is displayed in the info box shown in <Figure 4.3>. If Window Screen Format is selected, then the read data is applied to directly on UI Screen.



<Figure 4.3> Information box for the read data from a pager

As shown in <Figure 4.3> there is a "Print" button. Clicking this button makes a hard copy via a printer. Click "Close" button to close this window.

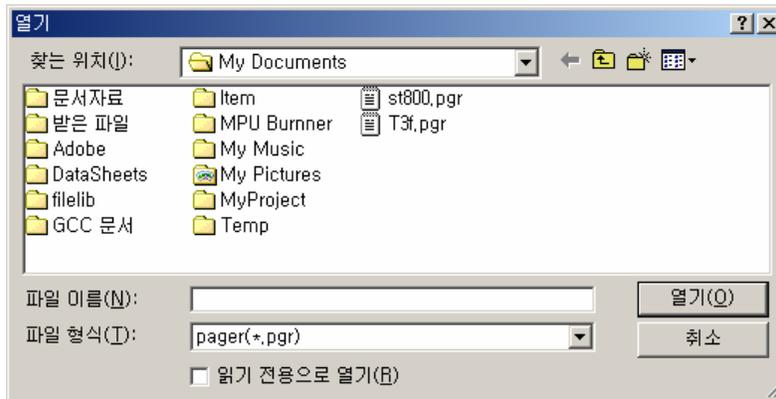
4.3 Menu bar, Tool bar and Status bar

4.3.1 File Menu

File Menu consists of four sub-menus: Open, Save, Print and Exit.

4.3.1.1 Open

Open menu loads the file with the file extension of \*.pgr. Clicking "Open" menu prompts a Open File Dialog box shown in <Figure 4.4>.



<Figure 4.4> Open File Dialog box

4.3.1.2 Save

Save menu saves the data to a file with the file extension of \*.pgr. Clicking "Save" menu prompts a Save File Dialog box similar to <Figure 4.4>. The saved file can be called by Open menu for future use.

#### 4.3.1.3 Print

This menu makes a hard copy of data that is currently specified on the software.

#### 4.3.1.4 Exit

Clicking "Exit" menu terminates software. Before terminating software it prompts a window shown in <Figure 3.3>.

### 4.3.2 Pager Menu

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

#### 4.3.2.1 Read

Read menu reads the data from a pager. This menu can be executed by pressing F5 key, 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 'Reading' is displayed on the status bar of the main panel. If the reading is successful, then 'Success' is displayed on the status bar of the main panel; whereas it displays 'Fail' 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.

#### 4.3.2.2 Write

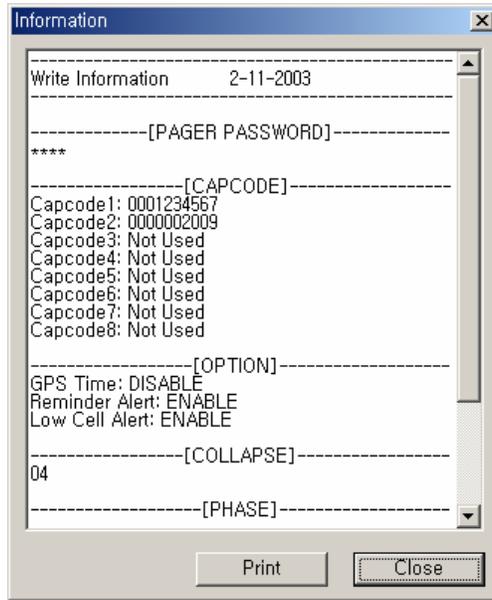
Write menu writes the data to a pager. This menu can be executed by pressing F6 key or space bar, also. Before writing the data to a pager, software checks if there are any invalid values on Address, PLL Frequency and Pager PW frames. The progress bar on the main panel shows the how much of the writing has been done. During the writing procedure 'Writing' is displayed on the status bar of the main panel. Like reading procedure, for successful writing it displays 'Success' on the status bar of the main panel; whereas it displays 'Fail' and a separate error message window for failure of writing.

#### 4.3.2.3 Auto Write

Auto Write menu writes a pager automatically every specified interval on the Configuration panel. This menu can be executed by pressing F7 key. 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 'Writing'. When it is done it displays 'Success' for successful writing or 'Fail' and a separate error message window for failure of writing. Therefore, change a pager to the next when 'Success' is displayed on the status bar of the main panel.

#### 4.3.2.4 Write Info

Write Info menu displays the data to be written to a pager on the info box shown in <Figure 4.5>. As shown in the <Figure 4.5> there are two buttons: "Print" and "Close". Clicking "Print" button makes a hard copy via a printer. "Close" button closes the box.



<Figure 4.5> Write Information box

4.3.3 Setting Menu

Setting menu consists of one sub-menu: Configuration.

4.3.3.1 Configuration

Configuration prompts Configuration panel shown in <Figure 4.2>.

4.3.4 Help Menu

Help menu consists of one sub-menu: About ST800FLEX.

4.3.4.1 About ST800FLEX

This menu prompts the about box for software shown in <Figure 4.6>.



<Figure 4.6> About ST800 FLEX

4.3.5 Tool bar

Tool bar has seven icons shown in <Figure 4.7>. From the left they are 'Open', 'Save', 'Print', 'Read', 'Write', 'Write Info' and 'Configuration'. This tool bar allows a user to select one of those seven listed menus in quicker way.



<Figure 4.7> Tool bar

4.3.6 Status bar

Status bar displays many information. It is located on the bottom of the main panel (see Figure 3.2). Progress bar is located on the status bar. Progress bar shows the how much of reading or writing from/to a pager is done so far. There are two text panes on the right side of the progress bar.

The first one displays 'Writing', 'Reading', 'Success', 'Fail' and 'Timeout'. 'Writing' is displayed during writing procedure, and 'Reading' for reading procedure. 'Success' and 'Fail' shows the result of writing or reading procedures.

'Timeout' is displayed when COM port is used to communicate with a pager only. 'Timeout' is another type of failure of writing or reading.

The second one displays 'COM' when the COM port is selected from the Configuration panel. Then software checks the connection between the PC and serial port buffer every second. If connection is made, then 'Connect' is displayed on the text pane, whereas 'Disconnect' is displayed while there is no connection between them. If LPT is selected from the Configuration panel, then 'LPT' is displayed on the text pane.

## 5. Default value of parameters and their allowed ranges

Panel	Fields	Default	Range
Main panel	Address 1 ~ Address 8	123456	Short & Long Capcode
	GPS Time	Unchecked	N/A
	Reminder Alert	Checked	N/A
	Low Cell Alert	Checked	N/A
	Collapse	4	0 ~ 7
	Phase	Any Phase	Any Phase, Phase A, Phase B, Phase C, Phase D
	Frequency	929.6625	929.0125 ~ 932.0000
	M/F	Samsung	Samsung, NPC 5170
	Pager Password	None	4 numbers
Configuration panel	Parallel Port	Disabled	N/A
	LPT	LTP1	LPT1, LPT2
	Serial Port	Enabled	N/A
	COM port	COM1	COM1 ~ COM20
	Baud Rate	9600	9600, 19200, 38400, 57600, 128000
	Interval	10	Parallel port: 3sec ~ 99sec
			Serial port: 10sec ~ 99sec
Read Data Format	Window Screen Format	Text File Format, Window Screen Format	

## 6. Error messages

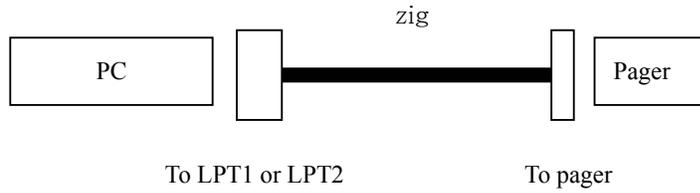
Error Message Number	Contents	Reason and Response
Error 101	Incorrect LogIn password	<b>Reason:</b> Incorrect login password is given <b>Response:</b> Enter the correct login password (case-sensitive)
Error 103	Pager password must consist of 4 numbers	<b>Reason:</b> Pager password is not given, or it is not 4 numbers <b>Response:</b> Given the 4-number pager password
Error 104	'\$', '/', and ':' are illegal	<b>Reason:</b> Illegal characters are entered where prohibited

	characters	<b>Response:</b> Delete illegal characters
Error 105	Loading the file failed	<b>Reason:</b> Specified file is not for ST800 FLEX <b>Response:</b> Make sure the file is for ST800 FLEX
Error 106	Error while creating ThreadWatchComm	<b>Reason:</b> Error for using serial port <b>Response:</b> Make sure the selected COM port is not occupied by another processor and re-open the port manually
Error 107	Queue is full	<b>Reason:</b> Error for using serial port <b>Response:</b> Terminate software and start again
Error 108	Fail to initialize COM port	<b>Reason:</b> Error for using serial port <b>Response:</b> Make sure the selected COM port is not occupied by another processor and re-open the port manually
Error 109	Data is corrupted	<b>Reason:</b> While writing/reading a pager via serial port, data is corrupted <b>Response:</b> Check the connection between a PC and the serial buffer
Error 110	Timeout	<b>Reason:</b> The serial buffer does not respond to PC <b>Response:</b> Check if Serial Port is enabled from Configuration panel. Check if serial buffer is turned on and connected to PC
Error 111	Minimum auto write interval value	<b>Reason:</b> Entered the number less than minimum allowed interval value <b>Response:</b> Change the interval value
Error 112	Port is already opened	<b>Reason:</b> Tried to open another COM port while one of the COM ports is opened <b>Response:</b> Close the COM port first and open it
Error 113	New and verify password do not match	<b>Reason:</b> New and verify passwords are different for login password <b>Response:</b> Make sure they are the same
Error 114	First Capcode must be used	<b>Reason:</b> Tried to write to a pager with empty first Capcode <b>Response:</b> Enter Capcode on the first Address field
Error 115	Illegal Capcodes	<b>Reason:</b> Illegal Capcode is entered <b>Response:</b> Check Capcode range
Error 116	Illegal PLL frequency	<b>Reason:</b> Illegal PLL frequency is entered <b>Response:</b> Check the PLL frequency
Error 117	Error during initializing the parallel port	<b>Reason:</b> Fail to initialize parallel port <b>Response:</b> Check if another processor is using the

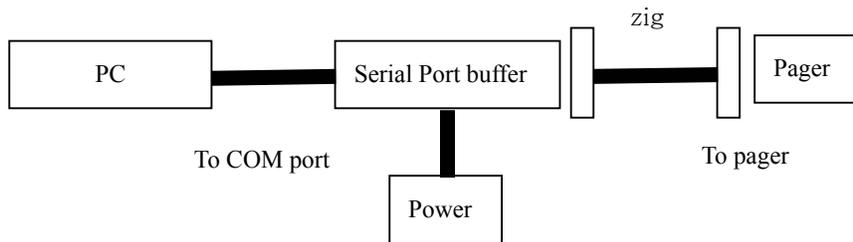
		parallel port.
Error 118	Failure during reading procedure	<b>Reason:</b> Bad connection while reading a pager <b>Response:</b> Check the connection between a PC and a pager and try again
Error 119	Failure during writing procedure via LPT	<b>Reason:</b> Error during writing procedure via LPT <b>Response:</b> Check the connection and try again
Error 120	COM port is not opened	<b>Reason:</b> Tried to write or read a pager while COM port is not opened <b>Response:</b> Open the COM port manually from Configuration
Error 121	Wrong pager password, or bad connection	<b>Reason:</b> Given pager password does not match with the password the pager holds <b>Response:</b> Give the correct pager password, or check the connection
Error 122	EEPROM is empty, or bad connection	<b>Reason:</b> There is no data on EEPROM for a pager <b>Response:</b> Bring the pager to the factory

## 7. Hardware connection

### 7.1 Parallel Port



### 7.2 Serial Port



## 8. Contact Info

### Company

**HANTEL CO., LTD.**

#518-8, YOO JIN B/D, DOGOK-DONG,

KANGNAM-KU, SEOUL, 135-270, South Korea

TEL: 82-2-571-4653

FAX: 82-2-571-4431

### Developer

**Young-chul Kim**

TEL: 82-2-3497-4561

Cell Phone: 82-11-9120-9724

E-mail: [yckim@han-tel.com](mailto:yckim@han-tel.com)