SMART Series

SMART-30S, SMART-30R, SMART-30D, SMART-50S, SMART-50D, SMART-50L

User Manual

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In order to make a warranty claim you must contact an IDP Reseller. You will be responsible for packaging the printer for shipment and the costs of shipping and insurance of the printer from the point of use of the printer to the IDP Reseller. The IDP Reseller will bear the costs of shipping and insuring the printer from the repair location to the address from which the printer was shipped.
Before returning any equipment for in-warranty or out-of warranty repair, contact an IDP Reseller or an IDP Service Center for a Return Materials Authorization (RMA) number. Repack the equipment in the original packing material and mark the RMA number clearly on the outside of the box. For more information about RMA or IDP warranty statements, refer to the Warranty booklet on the quick install guide.

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1. Introduction

1.1 Printer outside features

1.1.1 SMART-30 outside feature.

For the user's convenience, SMART-30 status can be seen through LED and the printer can be controlled by a button. It takes a power via the 24V adaptor provided with the printer. Using USB and Network port, it is communicated with the user's PC

The following shows the outside functional features found on the printer.

① **Top cover open button**

② **External contactless Smartcard encoding position**

③ **Input hopper**

④ **LED buttons**

⑤ **Dividing Stacker**

Pic.1 SMART-30 front features

① **Backside card outlet**

② **Power switch**

③ **24V power connector**

④ **Network port**
In case there is no network option, it is closed.

⑤ **USB port**

Pic.2 SMART-30 back features

There are five models in SMART-50 card printer series such as SMART-50S, SMART-50D, SMART-50L.

SMART-30S (Pic.5) is the standard card printer. It can be printed in single side with the encoding. This manual is prepared based on SMART-30S.

SMART-30R (Pic.6) is the rewritable card printer. It can rewrite on rewritable card in single side with encoding.

SMART-30D (Pic.7) have a flipper which can enable to print in both side. SMART-30D can print the both side of the card with the encoding.

Pic.3 SMART-30S (Standard)	**Pic.4 SMART-30R (Rewritable)**
Pic.5 SMART-30D (Dual)	

1.1.2 SMART-50 outside feature.

For the user's convenience, SMART-50 status can be seen through LCD with LED and the printer

can be controlled by two LED buttons. It takes a power via the 24V adaptor provided with the printer. Using USB and Network port, it is communicated with the user's PC

The following shows the outside functional features found on the printer.

① **Top cover open button**

② **External contactless Smartcard encoding position**

③ **Fan**

④ **Input hopper**

⑤ **LED buttons**

⑥ **LCD show the process status**

⑦ **Internal SIM reader**

Pic.6 SMART-50 front features

⑥ **Backside card outlet**

⑦ **Power switch**

⑧ **24V power connector**

⑨ **Network port**
In case there is no network option, it is closed.

⑩ **USB port**

Pic.7 SMART-50 rear features

There are five models in SMART-50 card printer series such as SMART-50S, SMART-50D, SMART-50L.

SMART-50S (Pic.5) is the standard card printer. It can be printed in single side with the encoding. This manual is prepared based on SMART-50S.

SMART-50D (Pic.6) have a flipper which can enable to print in both side. SMART-50D can print the both side of the card with the encoding.

SMART-50L (Pic.7) produces long-life cards for ID and access control with customizable security features and ability to print smart cards. To cater to expanding requirement in card security, SMART-50L's DLW(Direct to Laminating in a Wink) technology provides the most stable & fast laminating solutions.

Pic.8 SMART-50S

Pic.9 SMART-50D

Pic.10 SMART-50L

1.2 Printer inside features

1.2.1 SMART-30 inside feature.

In SMART-30 printer, the ribbon is installed by a ribbon cartridge which can be used semipermanently. The following shows the inside functional features found on your SMART-30 printer.

Pic.11 SMART-30 Inside features

① **Output hopper(Stacker)**
Collect the printed card and/or encoded cards.

② **Input hopper**
Load the cards for printing.

③ **Card thickness control lever**
Adjust the cards thickness.

④ **Ribbon cartridge**
Install the ribbon and the disposable cleaning roller.

⑤ **Thermal Print Head**
This enables the cards to be printed.
(Caution**!**: This is very hot after printing. Do not contact the surface of the Thermal Print Head with fingers or a sharp metal object to avoid degrading print quality or damaging printer head permanently.)

1.2.2 SMART-50 inside feature.

In SMART-50 printer, the ribbon is installed by a ribbon cartridge which can be used semipermanently. The following shows the inside functional features found on your SMART-50 printer.

① **Output hopper**

② **Input hopper**

③ **Card thickness control lever**

④ **Ribbon cartridge**

⑤ **Thermal Print Head**

⑥ **External contactless encoder**

Pic.12 SMART-50 Inside features

② **Output hopper(Stacker)**
Collect the printed card and/or encoded cards.

② **Input hopper**
Load the cards for printing.

③ **Card thickness control lever**
Adjust the cards thickness.

④ **Ribbon cartridge**
Install the ribbon and the disposable cleaning roller.

⑤ **Thermal Print Head**
This enables the cards to be printed.
(Caution**!**: This is very hot after printing. Do not contact the surface of the Thermal Print Head with fingers or a sharp metal object to avoid degrading print quality or damaging printer head permanently.)

⑥ **External contactless encoder**
Contactless smartcard encoder.

1.3 Ribbon cartridge features

① **Ribbon cartridge**

② **Take up parts**

③ **Supply parts**

④ **Disposable cleaning roller**

Pic.13 Ribbon cartridge features

① Ribbon cartridge

-. Install a ribbon and a disposable cleaning roller provided with the ribbon.

-. In the case of SMART-30 R model, a ribbon is not used, and a disposable cleaning roller is only installed and used.

-. This semi-permanent ribbon cartridge is a component of the printer. Printer does not operate if it is broken or damaged. In this case, please contact printer reseller.

② ③ Take up & Supply parts

-. Ribbon is wrapped to the supply parts as the Pic. 10. It should be installed as the Pic.10.

④ Disposable cleaning roller

-. It removes dust on the surface of card to improve print quality before the card is printed. It should be changed together with the ribbon.

-. After installing the disposable cleaning roller to the ribbon cartridge, peel off the protective film.

-. It is provided with the ribbon.

-. In the case of SMART-30 R model, you have to purchase the disposable cleaning roller from the reseller.

1.4 LCD panel display & button operation

SMART-50 printer can show the real-time process status to user. SMART-30's status is displayed in windows tray.

No	LCD Display	LED		Button		State	Description
		Left	Right	Left	Right		
1	Ver X.XX… Initialize…	On	On			Initializing	Initializing with the indication of SMART-50 firmware version
2	INIT Error xx <Replay Replay>	Blinking	Blinking	Repeat	Repeat	Error during initializing	Showing error no. in case of failure of normal initializing while SMART-50 is initialized. (Refer to page13). Press any keys for re-initializing process.
3	S m a r t Auto Ribbon Set	On	On			Automatic ribbon setting	It optimizes the ribbon position setting automatically in case of the replacement of color ribbon(YMCKO or YMCKOK).
4	Auto Ribbon Set Fail!!!!	Blinking	Blinking			Fail to optimize the ribbon setting	Display these messages when the auto ribbon setting is failed and it shows the ribbon detecting level.
5	Auto Ribbon Set Color=xxx(xxx)	Blinking	Blinking			Fail to optimize the ribbon setting and display the ribbon's color value	
6	S M A R T System Ready	On	On	Installed ribbon information	Soft power ON/OFF	Standby	Printer is ready for printing and you can check the installed ribbon information by pressing the left button. Printer turns off by pressing the right button. Printer turns on by pressing the right button when it turns off.
7	Wait.. 1"C Temperature=xxx	Blinking	Blinking			Printer's operating temperature is under 1℃	Shown it when printer's operating temperature falls down under 1℃. Normal operating temperature is 15℃~35℃.
8	S m a r t Unlock Please..	On	On			Printer is locked	Physical key option is active using the CardPrinterSetup utility and it shows the locked state. Unable to print.
9	S m a r t Verify your PC	On	On			PC is not authenticated	Authentication option is active using the CardPrinterSetup utility. When use the printer with an unauthenticated PC, it is shown. Printer is not working.
10	Ribbon Balance Type / Remains	On	On	Card out		Display the ribbon type and remains	Display the installed ribbon's type and the remains. It can be shown by pressing the left LED button on the system ready mode.
11	S M A R T Printing!	On	On			Printing	Under printing.

No	LCD Display	LED		Button		State	Description
		Left	Right	Left	Right		
12	S M A R T Mag R/W	On	On			Reading or writing the Magnetic stripe	Magnetic encoder is reading or writing the magnetic stripe information.
13	Spool Error! <-Any Key Push->	Blinking	Blinking	Cancel & Initialize	Cancel & Initialize	Printing data is not transmitted properly	Shown it when error occurs in a printing data transmission. Press any keys to delete the spooled data and to return the ready state.
14	Print Error xx <Replay Cancel>	Blinking	Blinking	Repeat	Cancel & Initialize	Error in printing or moving a card	Error in the printing or the transmission. Retry by pressing the left button or cancel the command by pressing the right button.
15	Top Cover Open <-Card Moving ->	Blinking	Blinking	Move a card to the back side	Move a card to the front side	Top cover open	Top cover is open. The card in the printer can be moved by pressing the left or right LED button. If press both buttons at the same time, the print head will be up and down. (Flipper will be flip over if it is installed)
16	Check Please.. Ribbon Not Found	Blinking	Blinking	Ribbon redetecting	Ribbon redetecting	There is no ribbon in the printer or fail to detect	Fail to detect the ribbon. Check the ribbon installed state. If there is no ribbon, install the ribbon. If there is a ribbon, pull out it and install again. Press the left or right button to redetect the ribbon.
17	Check Please.. Ribbon Zero	Blinking	Blinking	Ribbon redetecting	Ribbon redetecting	The installed ribbon has run out	It is displayed when the installed ribbon is all used up. Replace with new ribbon. Press the left or right button to redetect the ribbon.
18	Check Please.. TPH Not Found	Blinking	Blinking			Thermal Print head is not installed	Thermal Print Head is not installed or there is a misconnection of the cable. Open the top cover to check the print head installed state or turn off the printer and check the cable connecting state.
19	Print Error xx Top Cover Open	Blinking	Blinking			Fail to move the card out (Check the card in the printer)	The card in the printer will be come out when the initialization or top cover close. If it is not come out, this message will be displayed. Remove the card and close the top cover.
20	Card Out Error <Replay Cancel>	Blinking	Blinking	Repeat	Cancel & Initialize	Fail to move the card out (Check the card in the printer)	After an error occurs in printing, the error card is not come out even though "Replay" or "Cancel" button is pressed.
21	S M A R T Download...	On	On			Firmware downloading	The printer is downloading the firmware. Do not turn off the power until it is rebooting. It takes about 20 seconds.
22	Board Test Mode Wait					Test mode state	Test mode which can test the sensors or motors of the printer. User can set the LED status.

Table1 Status display

Description of printer error code

Error code	Description
0	Card in error
1	Card move center error
2	Card out error
3	Card move magnetic error
4	Card move contact encoder error
5	Card move contactless encoder error
6	Card move error from the printer to the flipper
7	Card move error form the flipper to the printer
8	Print head up error
9	Print head down error
10	IC Contactor up
11	IC Contactor down
12	Flipper top error
13	Flipper bottom error
14	Error in printing
15	Magnetic stripe read/write error
16	Ribbon search error
17	Ribbon move error
18	No print head installed
19	Print head overheating
20	No ribbon
21	Printing data error
22	Card back out error
23	Magnetic data erasing error
24	Printer password is not correct
25	Magnetic stripe track 1 read error
26	Magnetic stripe track 2 read error
27	Magnetic stripe track 3 read error
28	Printer locked state
29	Printer spool full state
30	No defined
31	No defined

Description of laminator error code

Error code	Description
0	Laminator head up error
2	Laminator head down error
4	Laminator card in error
6	Laminator card move error
8	Laminator card front out error
9	Laminator card rear out error
10	Flipper error
13	Error while laminating
15	Laminator initializing error
16	Laminator film zero error
17	Laminator film search error
31	No laminating film

2. Printer installation

2.1. Fitting the ribbon

Before printing, prepare the related items such as a card, a ribbon and a cleaning roller. In this section we invite you to know the proper method of installing the ribbon and the cleaning roller into the printer. In the case of SMRT RW model, the ribbon is no needed so skip 2.1.4 and 2.1.5 process.

2.1.1. Turn off the printer

Pic.14 Top Cover open

2.1.2. Open the printer top cover by pressing the top cover open button.

Pic.15 Take out the ribbon cartridge

2.1.3. Take out the ribbon cartridge.

Pic.16 Loading the ribbon 1

2.1.4. Install a ribbon into the ribbon cartridge as left Pic. 13.

Pic.17 Loading the ribbon 2

2.1.5. Insert the supply side of the ribbon to no.1 hole and press the opposite (no.2). Insert the take-up side of the ribbon same method to no.3 and no.4. After inserting, tighten the ribbon.

(Caution! If the ribbon is not tightened, a rolling up error might be happened.)

Pic.18 Installing the cleaning roller

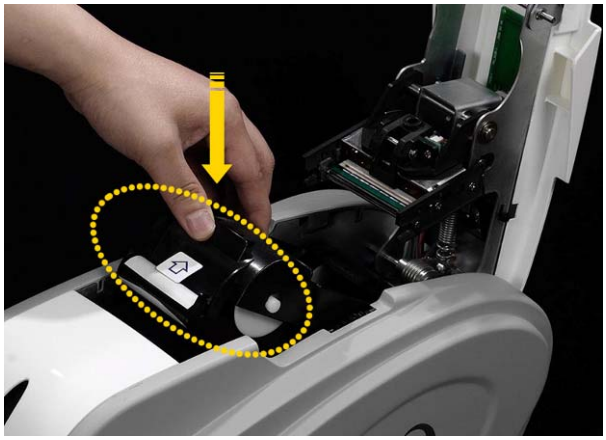
2.1.6. Install the disposable cleaning roller to the ribbon cartridge.

Pic.19 Peeling the protective wrapper

2.1.7. Peel the protective wrapper from the cleaning roller.

After removing the protective wrapper, the cleaning roller should be kept clean from fingerprints, dust and foreign substances to avoid contamination because it is adhesive.

(Caution! Do not use without peeling off the protective wrapper because the cleaning roller cannot perform its function.)



Pic.20 Installing the ribbon cartridge

2.1.8. Install the ribbon cartridge into the printer after installing the ribbon with a cleaning roller to the cartridge.

Pic.21 Close Top Cover

2.1.9. Close the top cover

(If it is not closed properly, check the installation state of the ribbon cartridge.)

2.2. Loading the cards

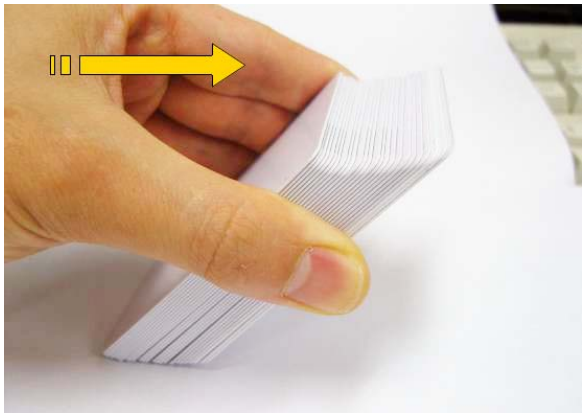
This section shows how to load the plastic cards.

Pic.22 Adjusting the card thickness lever

2.2.1. Open the input hopper cover.

2.2.2. Adjust the card thickness with the card thickness control lever.

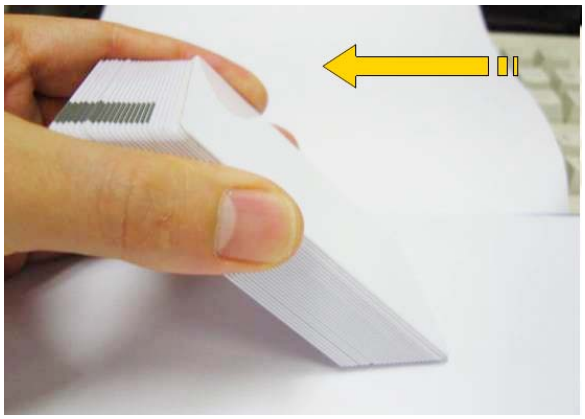
(Caution! If the adjustment is not correct, it will make some error. Use the type of cards in the specification of this manual. Always keep the card surface clean state.)



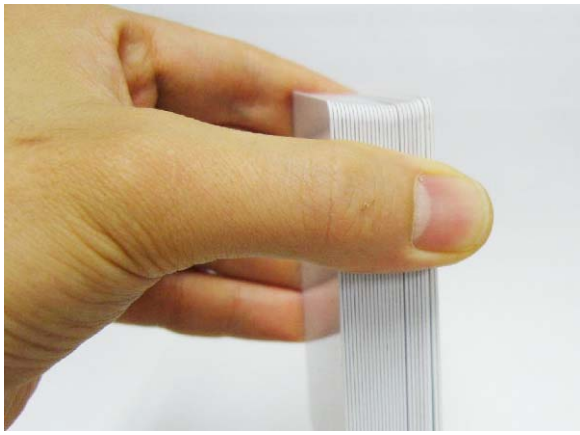
Pic.23 Preparing the card 1

2.2.4. To separate cards from each other, push a stack of cards back and forth to an angle about 45 degrees vertically.

(Static charge makes cards stuck with significant adhesive force. These cards must be physically separated from each other before inserted into the feeder. If not separated, feeding or printing problems may occur.)



Pic.24 Preparing the card 2



Pic.25 Loading the cards 1

2.2.5. Stand the stack of cards vertically after separating.

Pic.26 Loading the cards 2

2.2.6. Load the cards on the input hopper properly and close the hopper cover.

Pic.27 Loading the cards 3

2.2.7. When insert each one card, insert the card to the end as the Pic. 24 and 25.

Pic.28 Loading the cards 4

2.3. The withdrawal of printed cards.

Printed cards are passed out to the stacker of rear bottom side of SMART printer. SMART-30's stacker can be divided as following image.

Pic.29 SMART-30 Stacker

SMART-50's stacker sticks out of the device so you can withdraw the printed cards easily.

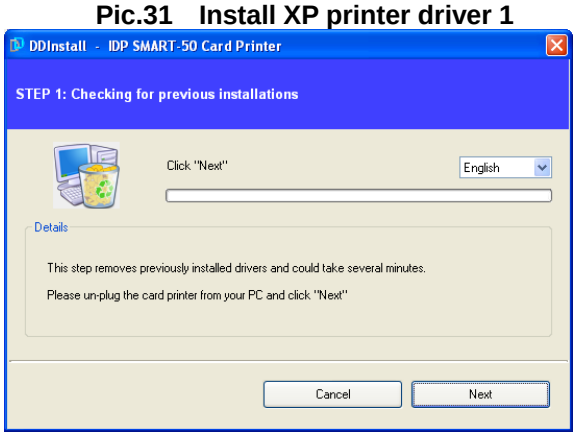
Pic.30 SMART-50 Stacker

2.4. Driver installation (Windows XP, 2000, 2003)

Pic.31 Install XP printer driver 1

2.4.1. Insert the installation CD provided with the printer.

2.4.2. Choose the language and click "Driver Install".



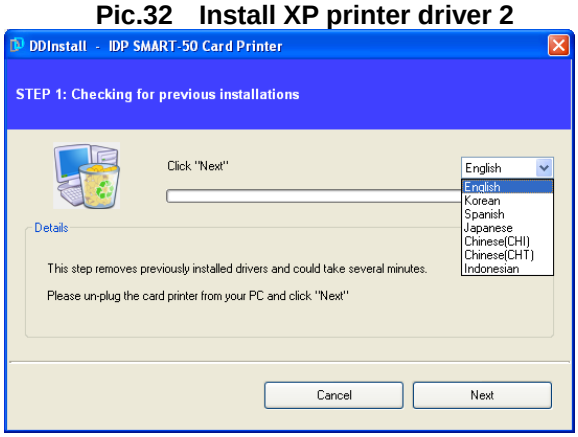
Pic.32 Install XP printer driver 2

2.4.3. STEP 1:

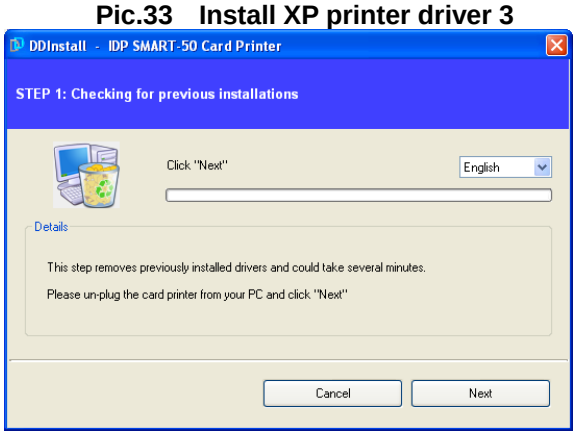
If the printer is connected to the PC and turned on, turn off the power of the printer.
Click "Next". The existing installed printer driver will be removed.

If the printer driver is already installed, it will be removed automatically but it may take times.

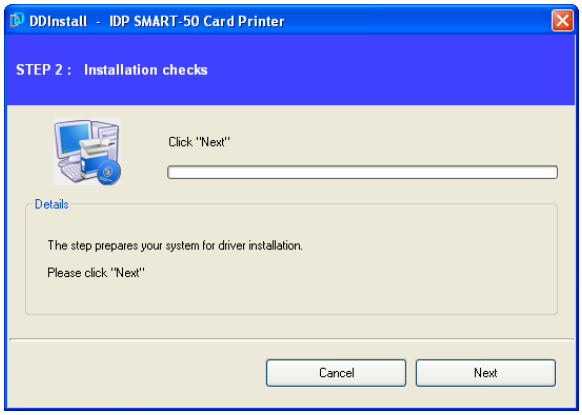
Choose the language as shown on the Pic.29 and 27.



Pic.33 Install XP printer driver 3



Pic.34 Install XP print driver 4



Pic.35 Install XP print driver 5

2.4.4. STEP 2:

Click "Next" to ready the installation of the printer driver.

Pic.36 Install XP print driver 6

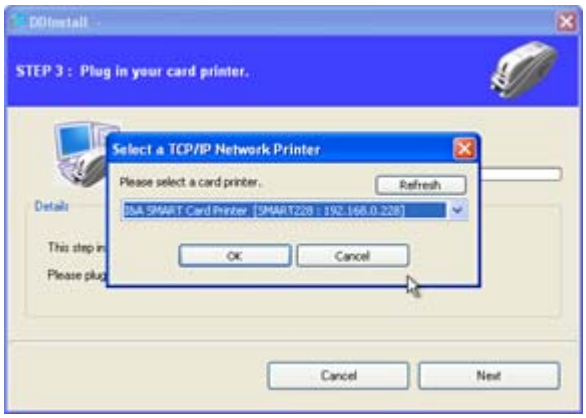
2.4.5. If there is a pop-up window for the software installation, click "Continue Anyway".

Pic.37 Install XP printer driver 7

2.4.6. STEP 3:

Click "Next" to use USB port.
Click "TCP/IP Network port" to use the printer as network printer and choose the printer as shown on the Pic.34.

(If there is no information on the window for the network printer list, it means that the printer is not connected to the network. Check "2.5 Network Printer" section.)



Pic.38 Install XP printer driver 8

Pic.39 Install XP printer driver 9

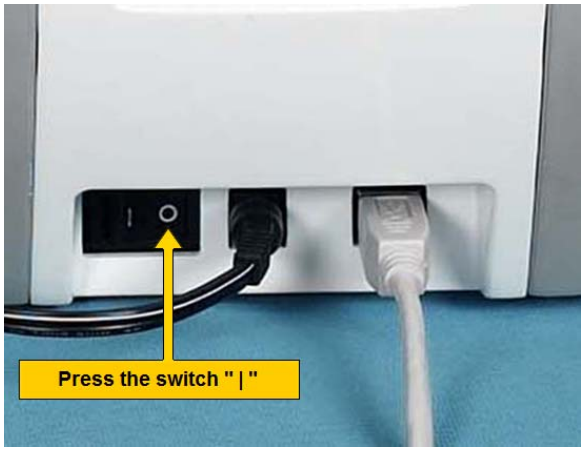
2.4.7. Please connect a power supply to the printer.

(For the network printer, refer to “2.5 Network Printer” section.)

Pic.40 Install XP printer driver 10

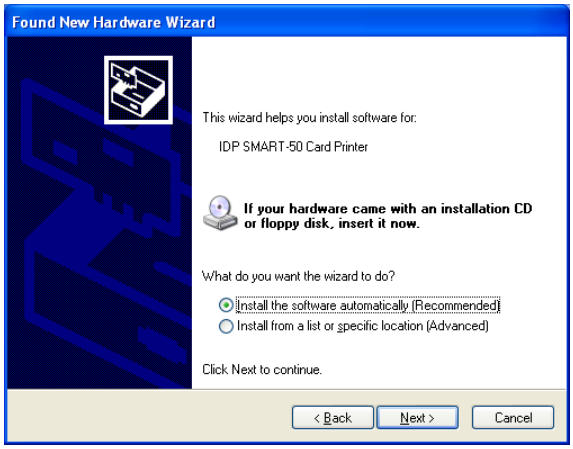
2.4.8. Please connect USB cable provided with the printer to PC and the printer.

(For the network printer, refer to “2.5 Network Printer” section.)



Pic.41 Install XP printer driver 11

2.4.9. Turn on the printer to boot up it.

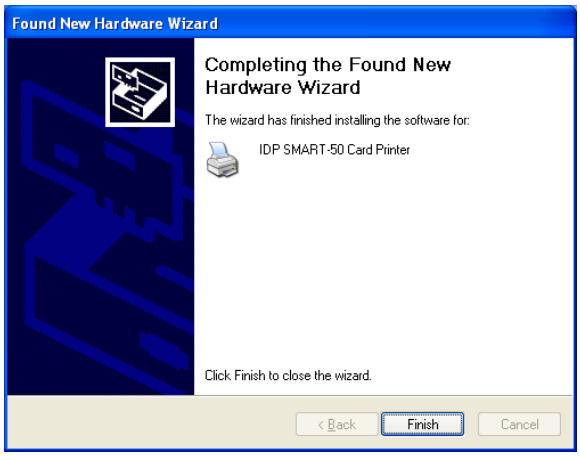


Pic.42 Install XP printer driver 12

2.4.10. Select "Install the software automatically (Recommended)"and click "Next".

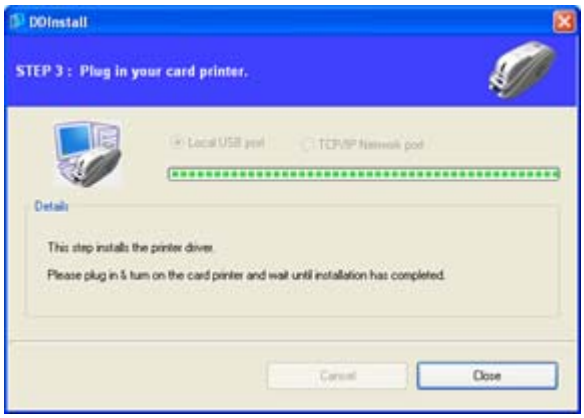
Pic.43 Install XP printer driver 13

2.4.11. Click "Continue Anyway" in Software Installation window.



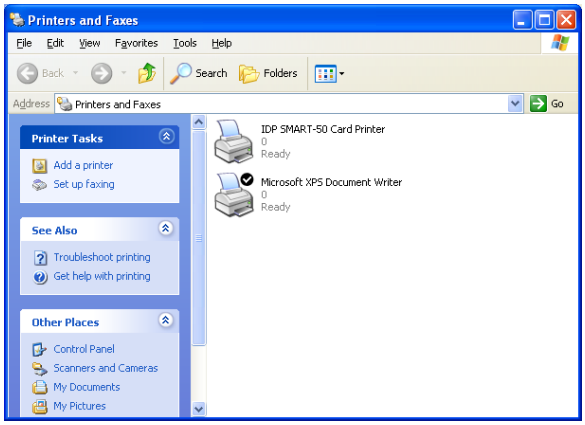
Pic.44 Install XP printer driver 14

2.4.12. Click "Finish" in Completing the Found New Hardware Wizard window.



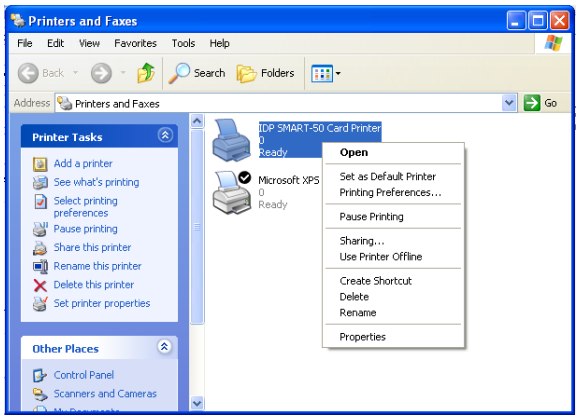
Pic.45 Install XP printer driver 15

2.4.13. When the printer driver installation is completed. Click "Close".



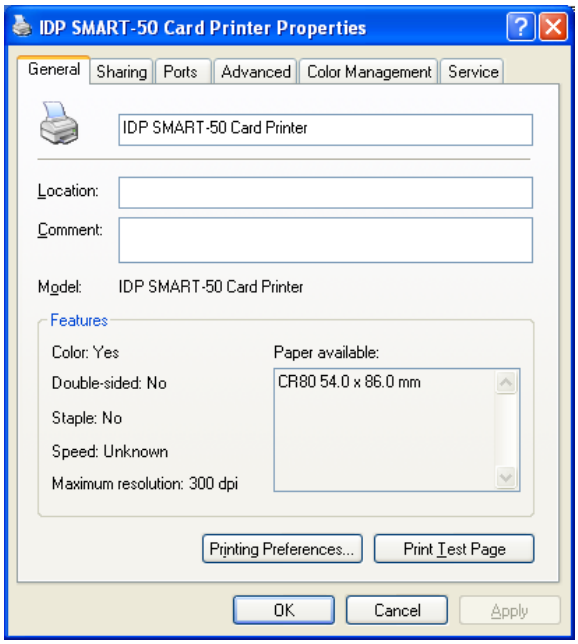
Pic.46 Install XP printer driver 16

2.4.14. Check "IDP SMART-50 Card Printer" is generated in Printers and Faxes window.



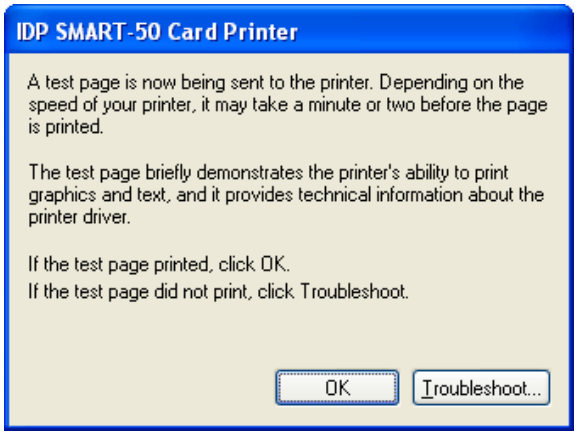
Pic.47 Install XP printer driver 17

2.4.15. After selecting the icon of "IDP SMART-50 Card Printer", click the right mouse button and select the "Properties".



Pic.48 Install XP printer driver 18

2.4.16. Select "General" tap and click "Print Test Page" button on the IDP SMART-50 Card Printer Properties window.



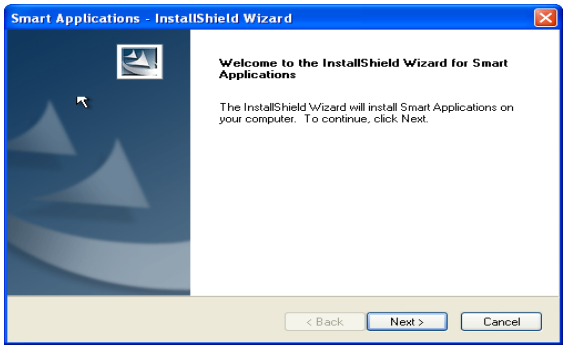
Pic.49 Install XP printer driver 19

2.4.17. Printer will start the printing and there will be the window which asks the printing success. If the printing is normal, click the "OK"

(If the printing is abnormal or the printer error is occurred, remove the problem refer to "Trouble Shooting" section and execute test printing again.)

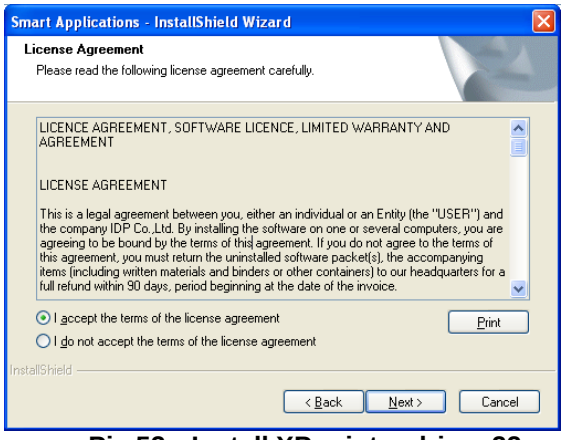
Pic.50 Install XP printer driver 20

2.4.18. Please install "Smart Application" program after installing the printer driver.



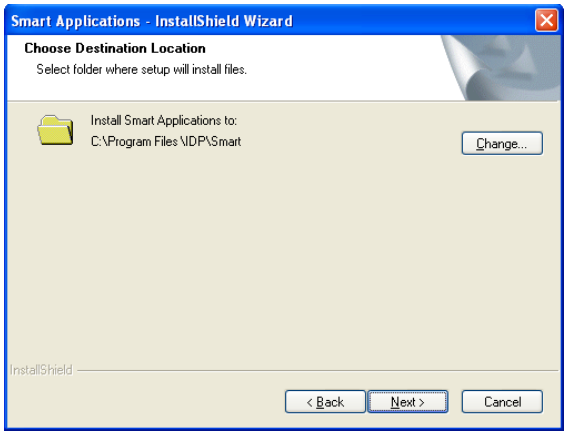
Pic.51 Install XP printer driver 21

2.4.19. Click "Next" on the "Smart Applications - InstallShield Wizard" window.



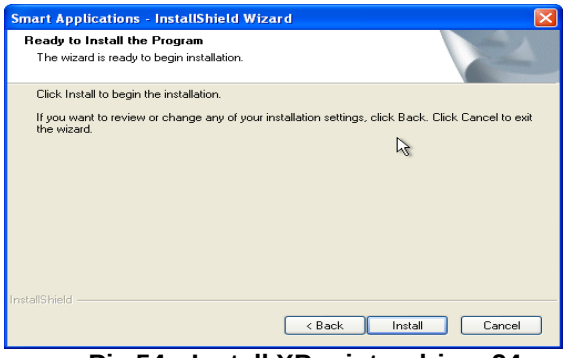
Pic.52 Install XP printer driver 22

2.4.20. Select "I accept the terms of the license agreement" and click "Next".



Pic.53 Install XP printer driver 23

2.4.21. Choose the destination location and click "Next".



Pic.54 Install XP printer driver 24

2.4.22. Click "Install" to begin the installation.

Pic.55 Install XP printer driver 25

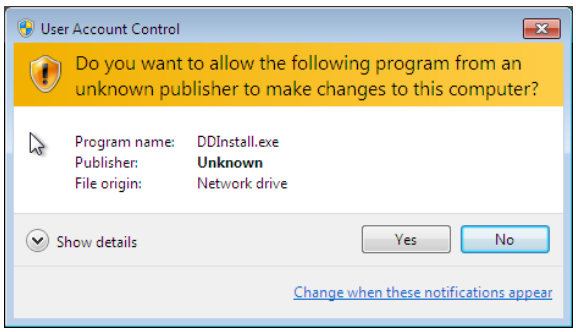
2.4.23. Smart Design/DB program is installed successfully.

2.5. Driver installation (Windows Vista, 7, 8)

Pic.56 Install Win7 driver 1

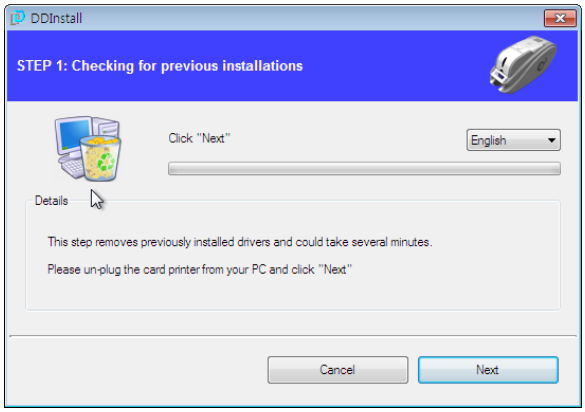
2.5.1. Please insert the installation CD.

2.5.2. Please choose language and click "Driver Install".



Pic.57 Install Win7 driver 2

2.5.3. When "User Account Control" window is opened, click "Yes"



Pic.58 Install Win7 driver 3

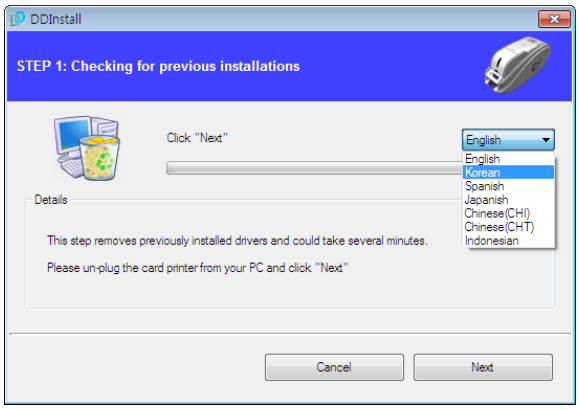
2.5.4. STEP 1:

Please turn off printer if it is connected to PC. Please click "Next".

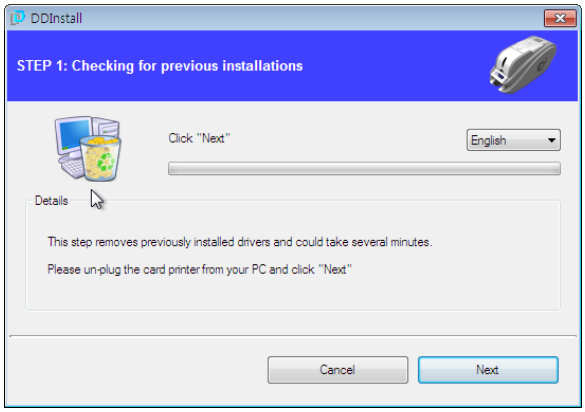
When you click "Next", older driver will be removed automatically.

This process will take several minutes to remove older driver.

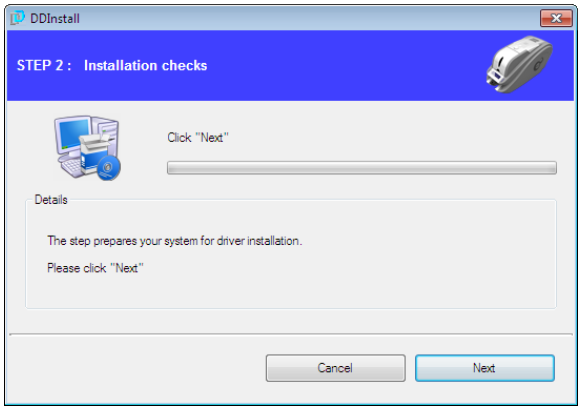
You can select the languages by selecting the combo box as shown on the Pic.55.



Pic.59 Install Win7 driver 4



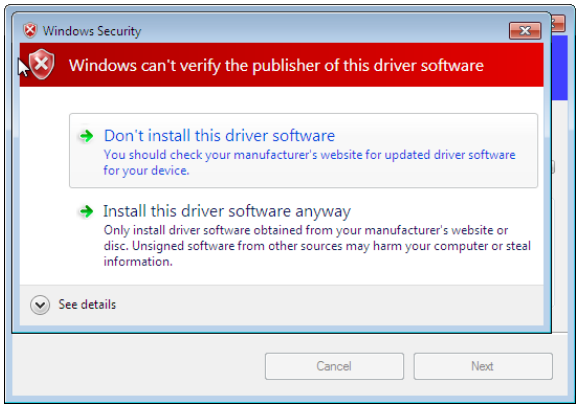
Pic.60 Install Win7 driver 5



Pic.61 Install Win7 driver 6

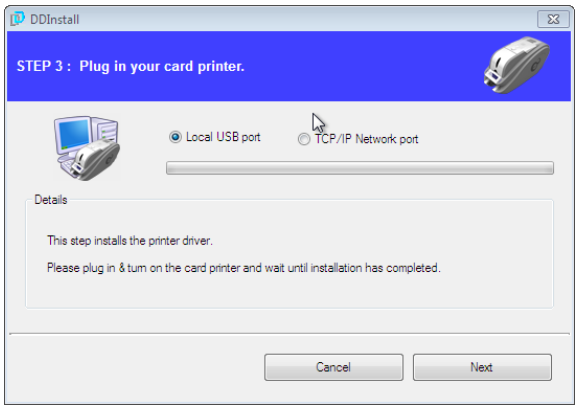
2.5.5. STEP 2:

When you click "Next", the driver installation will be ready.



Pic.62 Install Win7 driver 7

2.5.6. Please click "Install this driver software anyway" in case "Windows Security" window comes out.



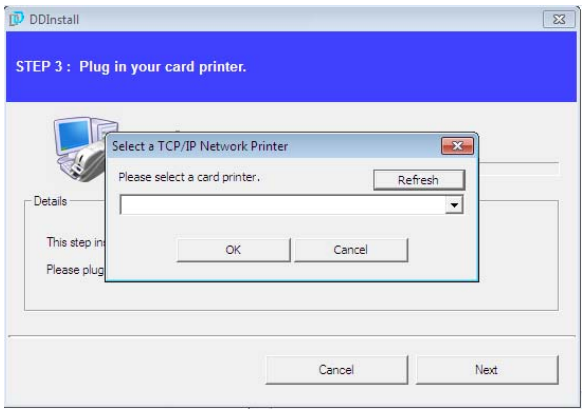
Pic.63 Install Win7 driver 8

2.5.7. STEP 3:

Please click "Next" if printer is connected to USB only.

If you want to install the driver for a printer connected to network, please select the "TCP/IP Network port" and select the proper printer as shown on the Pic.60.

(If no printer comes out on the window, please check the connection. Please refer "2.5 Network Printer Setup".)



Pic.64 Install Win7 driver 9

Pic.65 Install Win7 driver 10

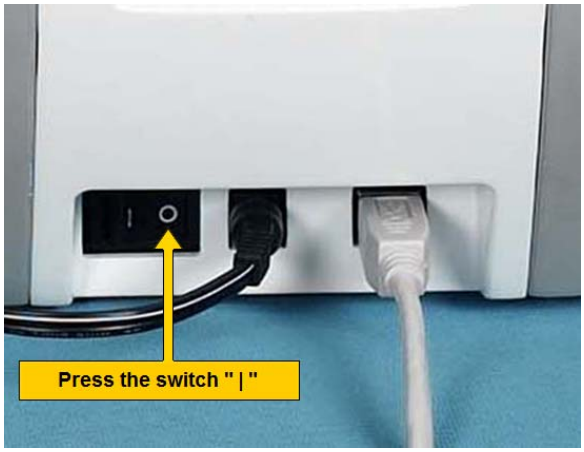
2.5.8. Please connect a power supply to the printer.

(If your printer is for network, please refer "2.5 Network Configuration".)

Pic.66 Install Win7 driver 11

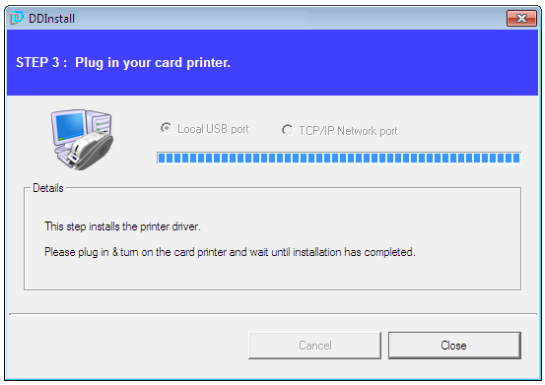
2.5.9. Please connect USB cable to the printer.

(If your printer is for network, please refer "2.5 Network Configuration".)



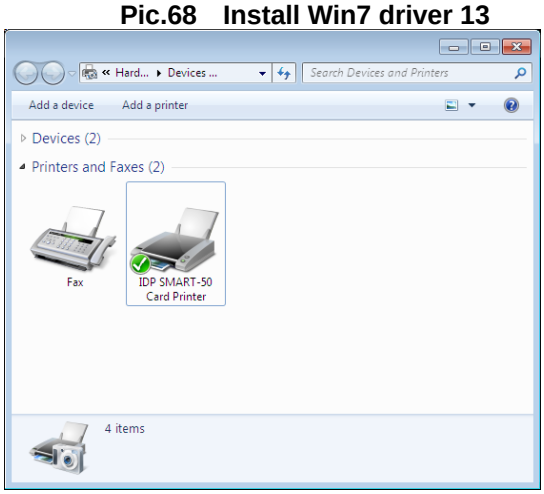
Pic.67 Install Win7 driver 12

2.5.10. Please turn on the printer.



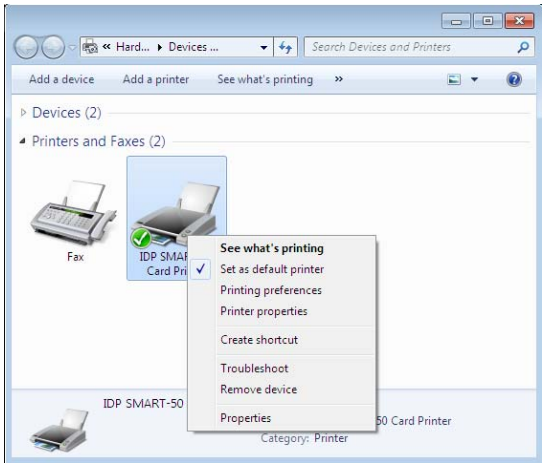
Pic.68 Install Win7 driver 13

2.5.11. When driver installation is completed, please click "Close".



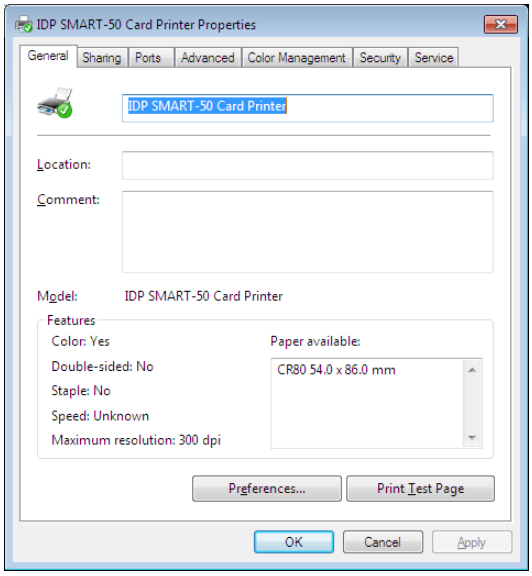
Pic.69 Install Win7 driver 14

2.5.12. Please open "Devices and Printers" from "Hardware and Sound". Please check if "IDP SMART-50 Card Printer" is created.



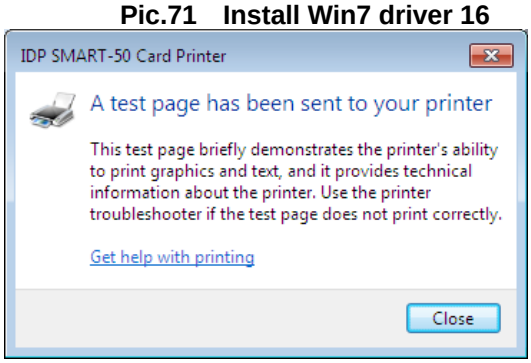
Pic.70 Install Win7 driver 15

2.5.13. Please click the right mouse button after cursor is placed on "IDP SMART-50 Card Printer" icon. Click "Printer properties".



Pic.71 Install Win7 driver 16

2.5.14. Please select "general" tab and click "Printer test page" in "IDP SMART-50 Card Printer Properties" window.



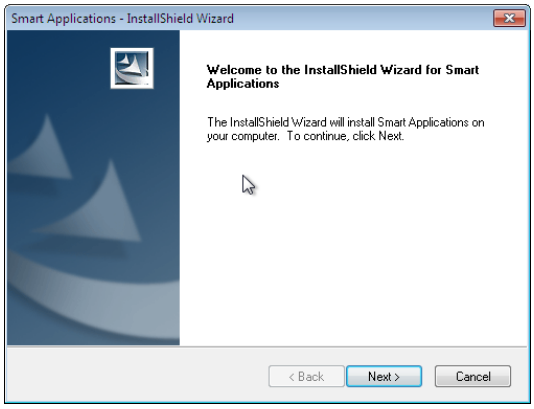
Pic.72 Install Win7 driver 17

2.5.15. Please check test card if it is printed properly and click "Close" if a card is printed properly.

(If card is not printed or error comes out, please refer "Trouble Shooting".)

Pic.73 Install Win7 driver 18

2.5.16. Please install "Smart Design/DB" by clicking "Smart Design/DB Installation".

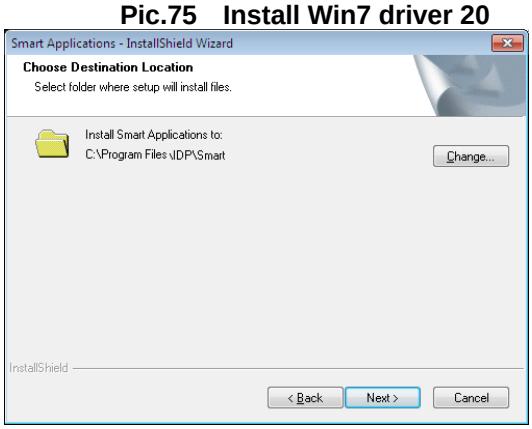


Pic.74 Install Win7 driver 19

2.5.17. Please click "Next" when "Smart Application Install Shield Wizard" comes out.

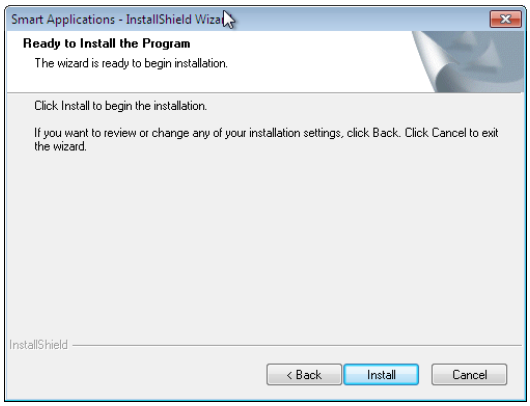
Pic.75 Install Win7 driver 20

2.5.18. Please agree "I accept the terms of the license agreement" and click "Next".



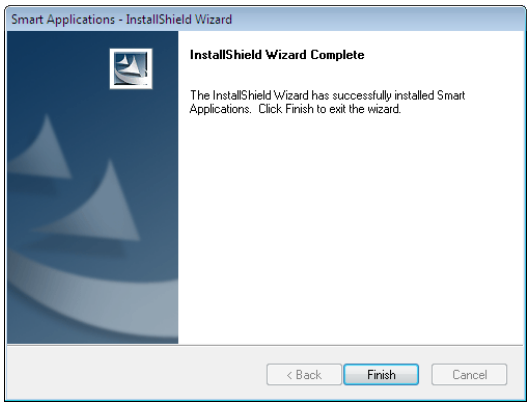
Pic.76 Install Win7 driver 21

2.5.19. Please select directory for program installation and click "Next".



Pic.77 Install Win7 driver 22

2.5.20. Please click "Installation".



Pic.78 Install Win7 driver 23

2.5.21. Please click "Finish".

2.5. Network configuration

2.5.1 Connecting network port

Pic.79 Rear view of SMART-50 printer 1

The printer which installed with network option has a port for network connection as shown in the Pic.76 - ③.

① Power Switch
② Power Supply Connector
③ Network Port
④ USB Port

Pic.80 Rear view of SMART-50 printer 2

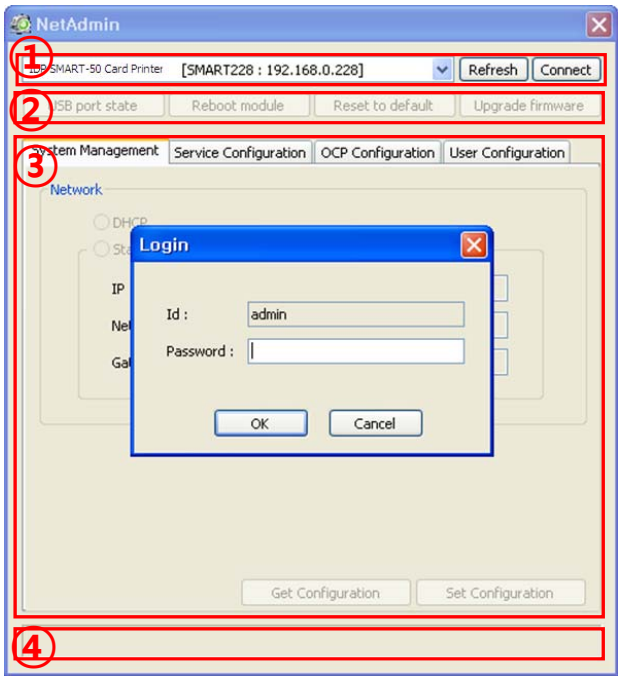
Please connect network cable (RJ45) to a printer.

(Network cable is not supplied. Please ask network administrator for more questions.)

2.5.2 Network configuration

DHCP (Dynamic Host Configuration Protocol) which automatically assigns IP address to the SMART-50 network printer on the same network is default for IP configuration. If you don't have DHCP server, you need to set static IP.

Please run NetAdmin.exe in the SMART-50 installation CD to set or change network configuration.



Pic.81 Running the NetAdmin

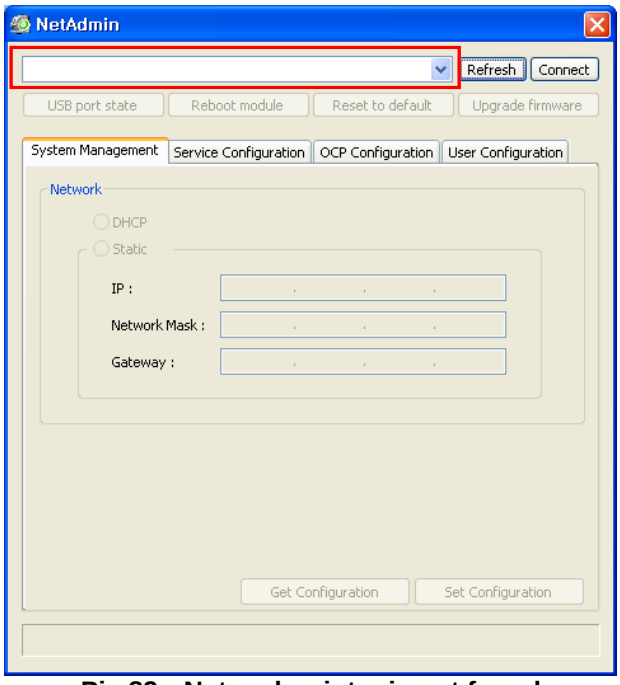
NetAdmin is run as the Pic74 after turning on SMART-50 network printer.

① Printer Connection Status
Searches local network, finds and shows available network printer.

② Network Module Management
Searches connected encoder on network module. Reboots, Resets network module. Firmware upgrade available

③ Printer Configuration
Sets detailed system configuration.

④ Network Information
Shows firmware version of network module

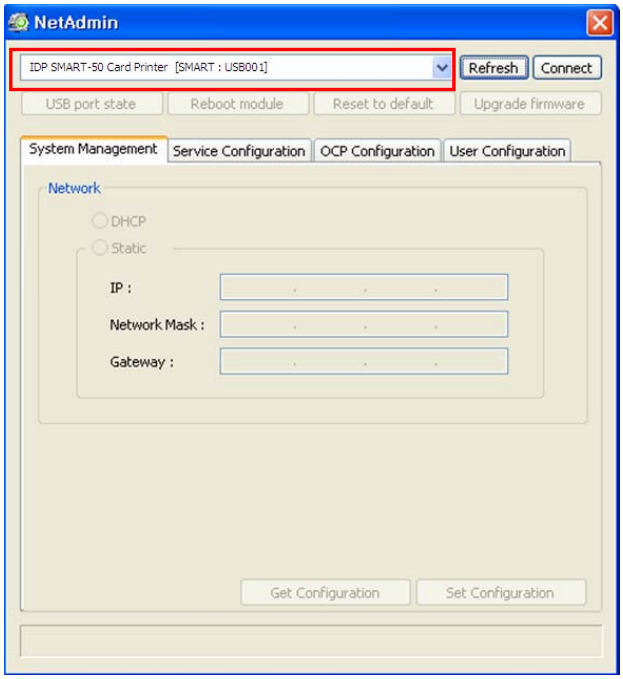


Pic.82 Network printer is not found

When no printer is connected to network, there is no printer shown on the box.

Please click "Refresh". If no printer shown, please check as below,

1. Please check the printer is turned on.
2. Please check network cable is connected to network hub and works properly (LED lamp blinking).
3. Please check if there is DHCP server in the local network. When DHCP server is not in your local network, you need to set Static IP.
4. If Static IP is used, please check the IP configuration. If another device uses same IP address, it doesn't work.

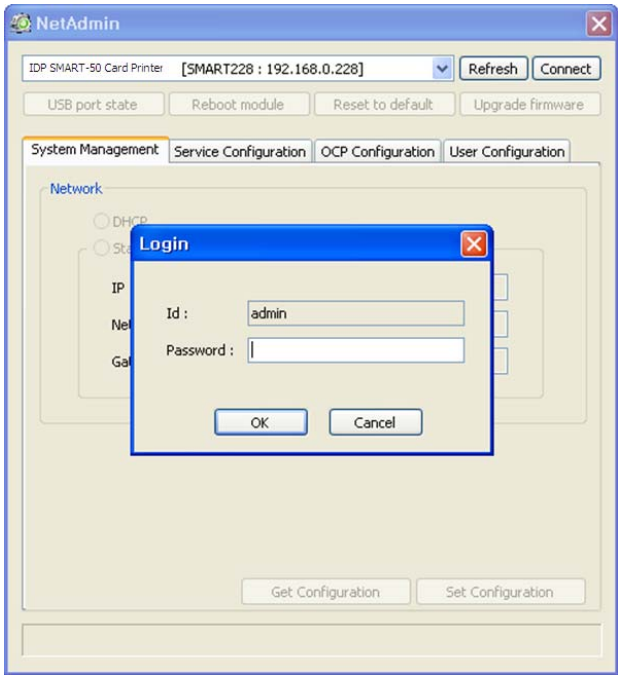


Pic.83 Connecting to USB port

If you are unable to find printer in local network, please connect printer by USB. You can setup network by USB.

When you click Refresh, you can find a printer connected by USB as shown in the Pic.80.

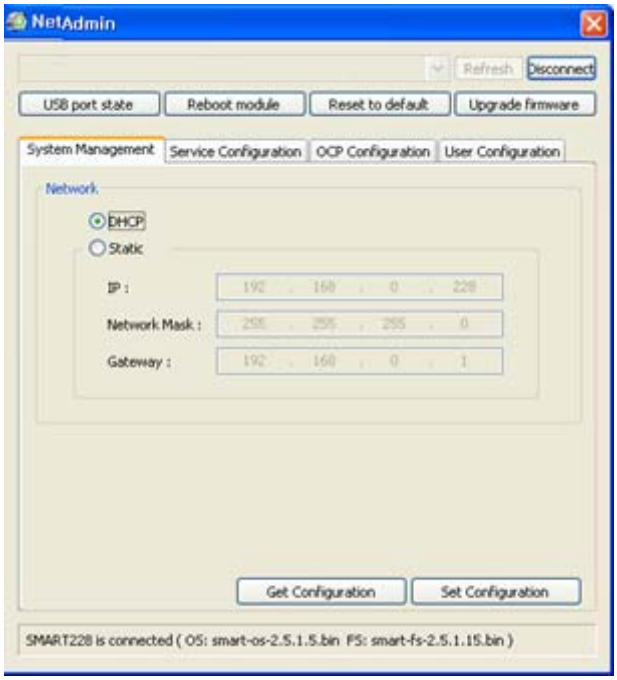
- You don't need to install device driver for network configuration by USB. Please ignore messages related to device installation.
- You can change values of "System Management" only when you connect a printer by USB. Please connect a printer by network to use all of the functions of Netadmin.exe.



Pic.84 NetAdmin Log-in

Please select a proper printer and click "connect". Please enter password and click "OK".

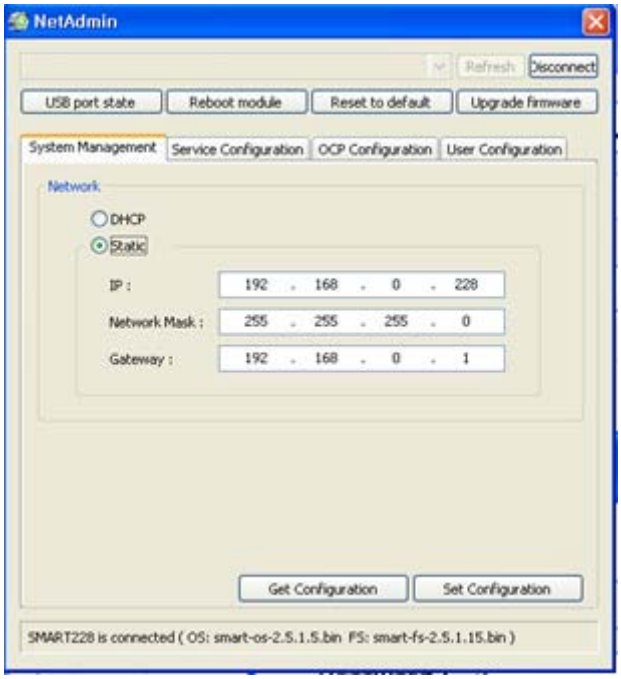
Default password is "**admin**".



Pic.85 Dynamic IP configuration

If you setup network automatically, please choose DHCP.

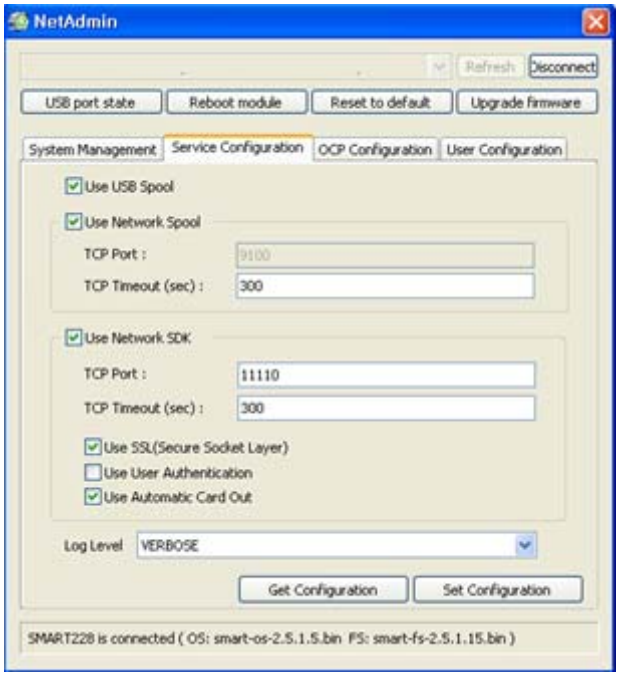
- Please select DHCP and click "Set Configuration".
- "**DHCP**" is default for SMART-50 printer.
- DHCP server should be in local network to use DHCP function.
- Static IP is recommended. DHCP server assigns IP address automatically but this IP address is temporary, so the IP address may be changed. In this case, the network error may occur in connecting to SMART-50 network printer.



Pic.86 Static IP configuration

Please select "Static" for Static IP configuration.

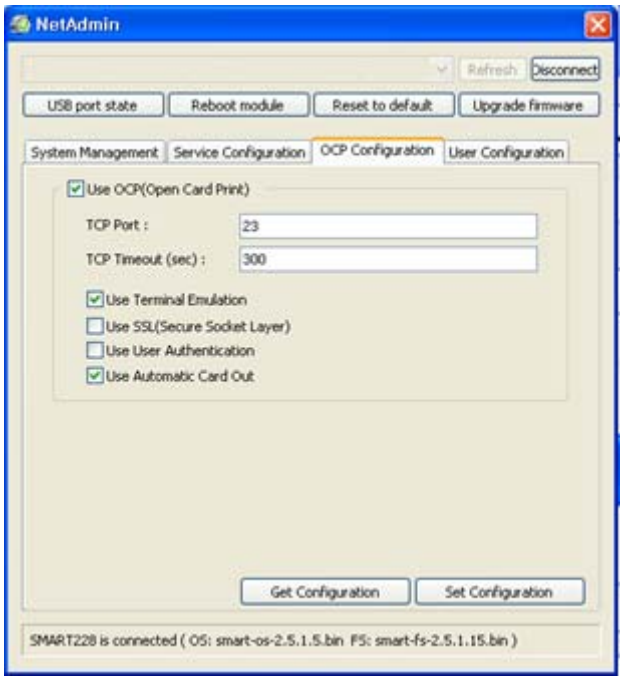
- Please enter values for "IP", "Network Mask", and "Gateway". Click "Set Configuration".
- Please check IP address properly which does not conflict with other devices.
- If you are not aware of static IP, please ask network administrator for Static IP.
- We recommend using Static IP because it is more stable for using SMART-50 network printer.



Pic.87 Network service configuration

You can change Service Configuration.

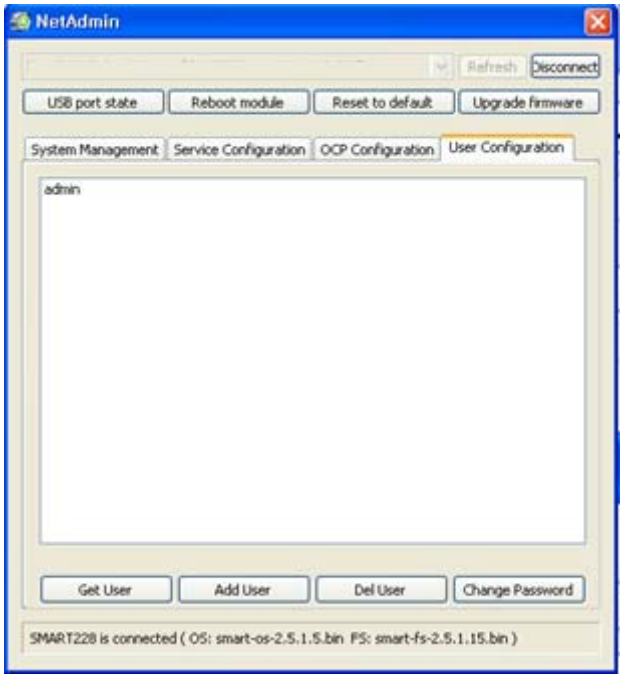
- SMART-50 network printer provides 3 kinds of service (change "USB Spool", "Network Spool" and "Network SDK"). You can select and change the service according to the need.
- In "Network SDK", you can control the printer and print a card well, and the printer supports SSL (Secure Sockets Layer) and User Authentication for security.
- Please use default and ask technician for details.



Pic.88 OCP configuration

You can use Open Card Print function.

- This function is for send commands and print through network card regardless of OS
- Click check box "Use OCP"
- " Use Terminal Emulation " is value for getting echo according to the commands through terminal. For security, it supports SSL and User Authentication.
- Please do not change default value except special case..

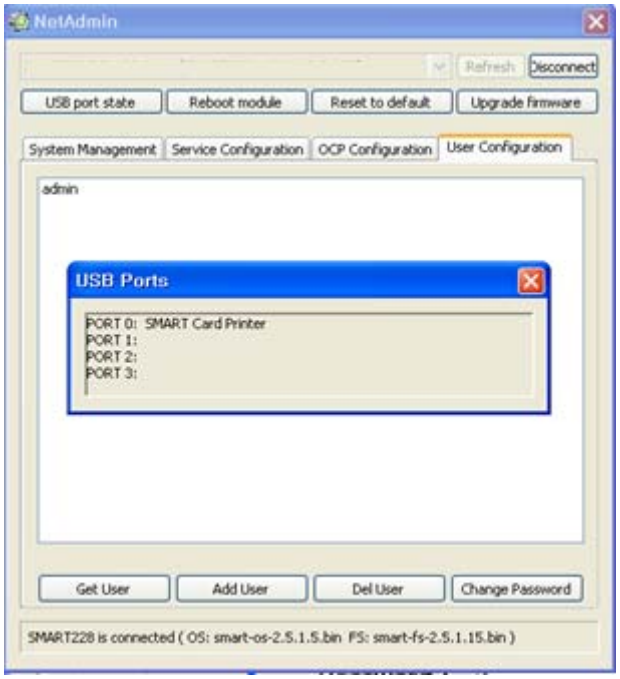


Pic.89 Network user configuration

You can add, change, delete User and change its password.

- "admin" is administrator and you can't delete this account. Please don't forget password for "admin"
- "Get User": shows available users
- "Add User": makes new user
- "Del User": deletes selected user
- "Change Password": changes password

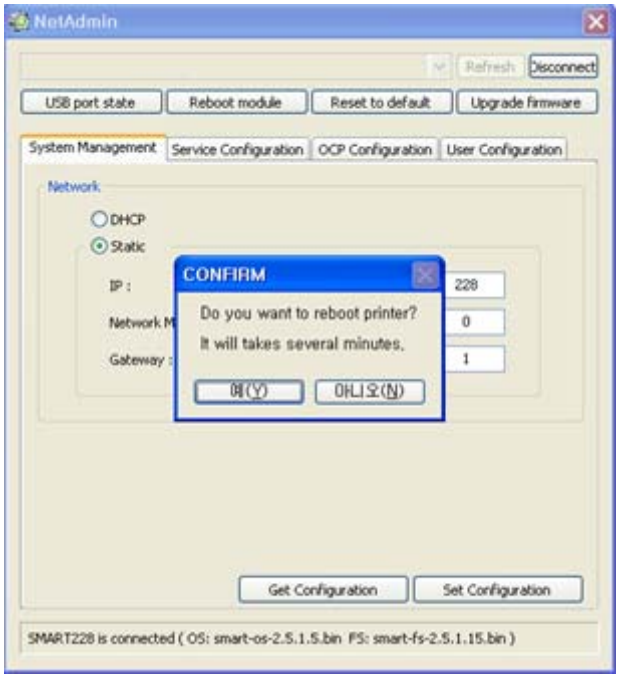
2.5.3 Network module management



Pic.90 USB port state

"USB port state" shows USB device status connected on network module.

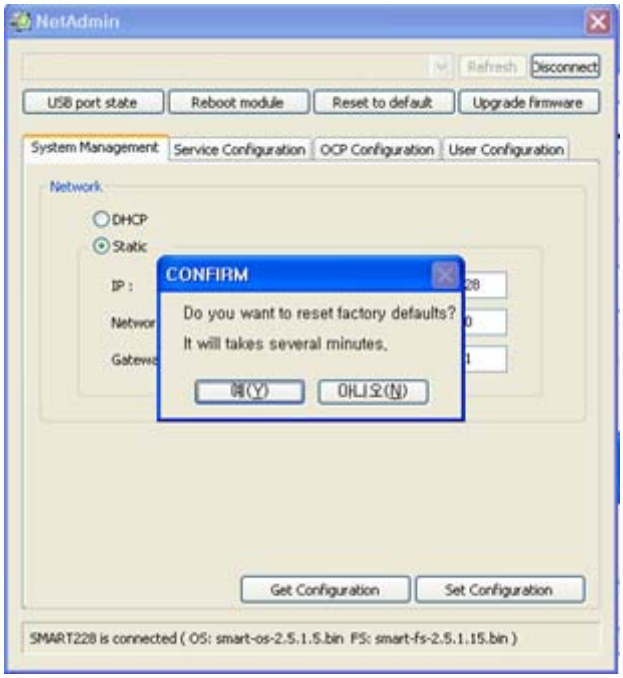
- Network module has 4 USB ports.
- Network module supports PC/SC. When you install the encoders that support PC/SC on network module, you can recognize the status of encoders.



Pic.91 Rebooting the network module

"Reboot module" reboots network module.

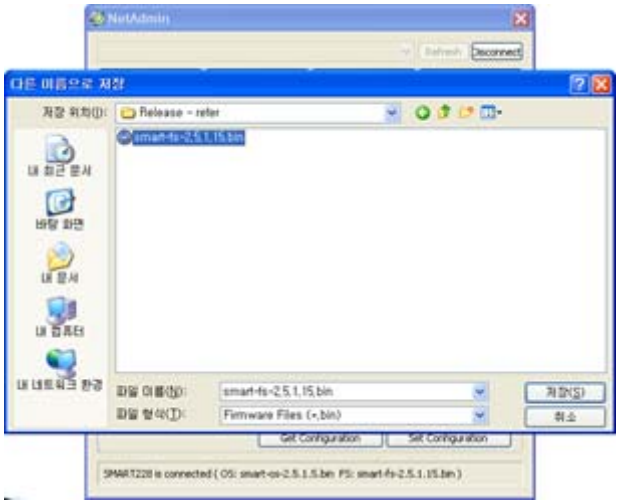
- Please click "Yes" when pop-up window comes out for reboot.
- It takes 1 minute to reboot.
- Please click "Refresh" after reboot. When proper printer shown, please connect printer by clicking "Connect".



Pic.92 Reset to default

"Reset to default" resets to default and reboot network module.

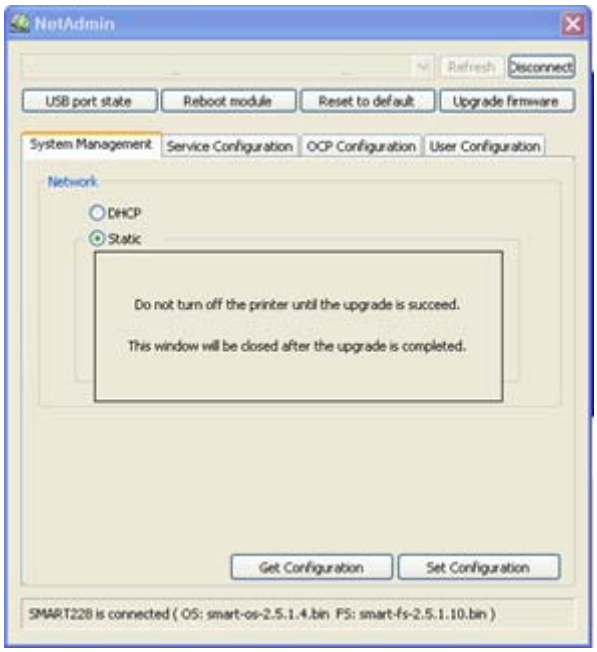
- Please click "Yes" when pop-up window comes out for reset.
- It takes 1 minute to reboot.
- Please click "Refresh" after reboot. When proper printer shown, please connect printer by clicking "Connect".



Pic.93 Upgrading the firmware 1

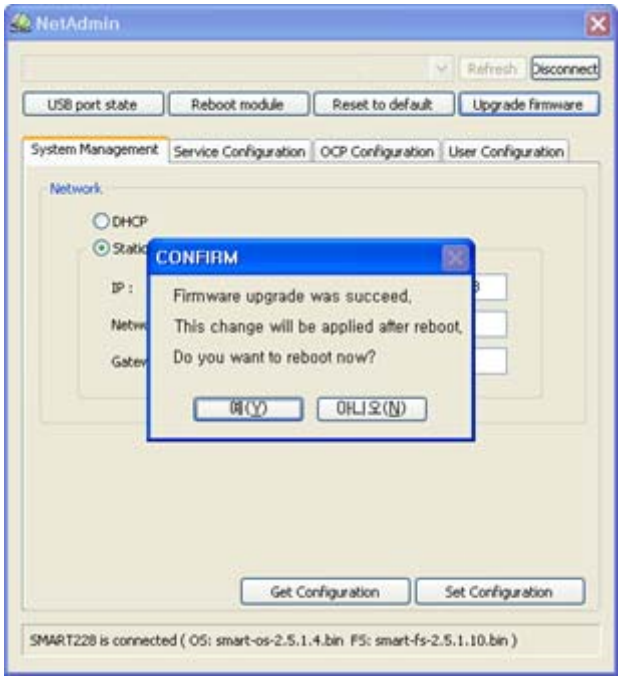
"Upgrade firmware" enables to upgrade firmware of network module.

- You can choose a firmware file.



Pic.94 Upgrading the firmware 2

- Warning box will be shown during firmware upgrade for network module.
- It is recommended not to do other work during firmware upgrade for system reliability.
- Please do not turn off a printer until the upgrade is completed.



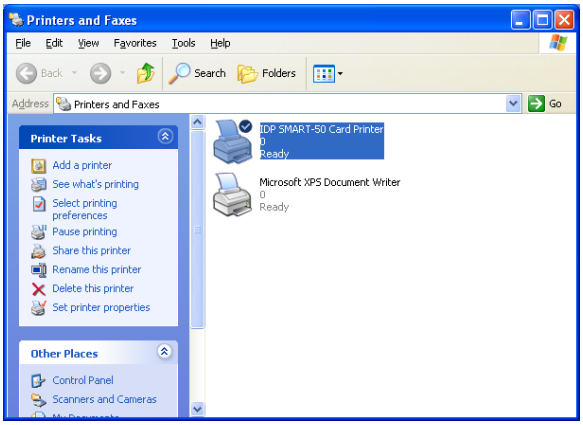
Pic.95 Upgrading the firmware 3

- When firmware upgrade is completed, pop-up comes out for reboot. Please click “Yes”.
- It takes 1 minute to reboot.
- Please click “Refresh” after reboot. When proper printer shown, please connect printer by clicking “Connect”.

3. Driver configuration

3.1. Checking printer properties

To check printer properties, you need to open printer driver. Please open “Drivers and Printers” and right-click “IDP SMART-50 Card Printer”. Click “Properties”. For Windows 7 or 8, please click “Printer Properties”.

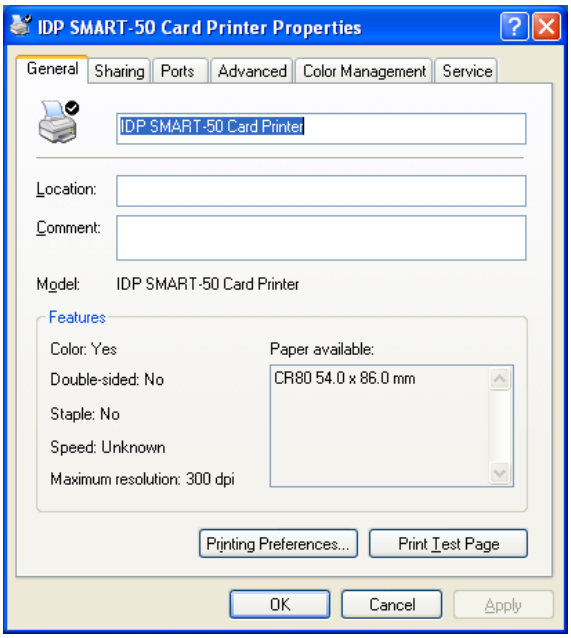


Pic.96 Printer properties 1

When you click “Printer Properties” as like Pic.88, a device driver of “IDP SMART-50 Card Printer” is shown.

3.2. Changing printer properties

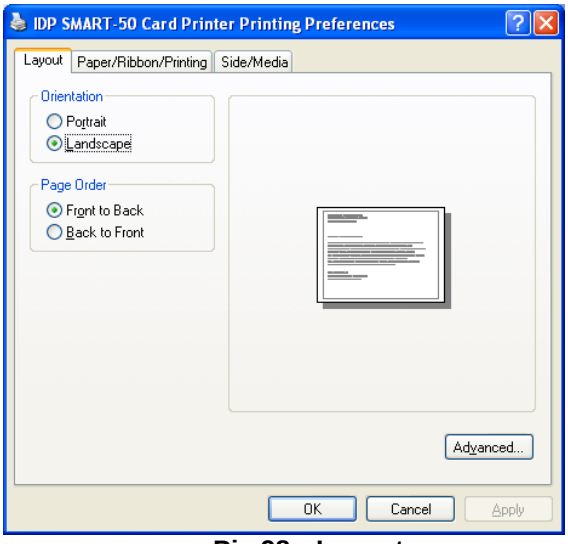
In the general tab shown as Pic.94, you can check the printer model and specifications.



Pic.97 Printer properties 2

3.2.1. Printing Preferences

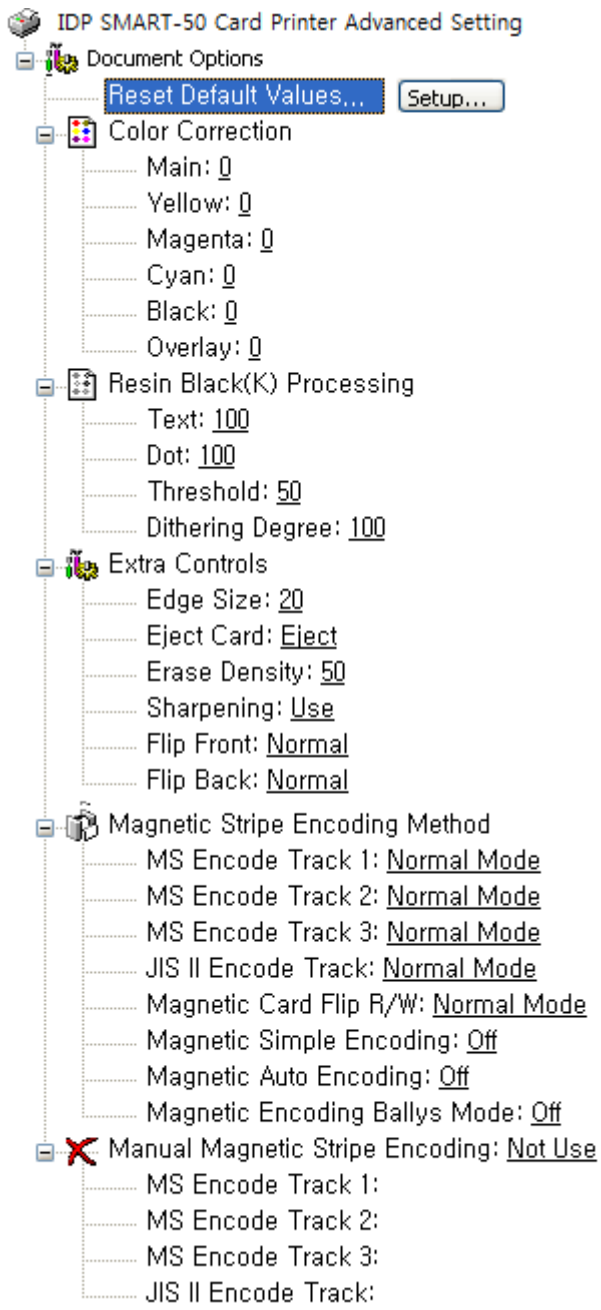
Please click “Printing Preferences” shown on the bottom of Pic.95.
There are 3 tabs of “Layout”, “Paper/Ribbon /Quality” and “Side/Media”.
(You can set the options for printing shown on Pic.95.)



Pic.98 Layout

3.2.1.1. Layout

- You can select either horizontal or vertical printing direction. To apply your selection, click “OK”.



Pic.99 Advanced Setup

3.2.1.2. Advanced setup

Reset Default Values: Reset to default.

Color Correction: You can correct gamma for colors. You need to use CardPrinterSetup to adjust color densities.

Resin Black (K) Processing: Set criteria for resin black processing.

Text: to set density criteria for extracting black objects

Dot: to set density criteria for extracting black dots

Threshold: to set density criteria on dithering

Dithering Degree: to set sharpness on dithering

Extra Controls :

Edge Size: to set not printed area in case of not using Edge-To-Edge

Eject Card: to set if eject a card after printing

Erase Density : to set erase density for SMART-30 R Erase

Sharpening: to calibrate image sharpened

Flip Front: to set printed direction of image on front side.

Flip Back: to set printed direction of image on back side.

Magnetic Strip Encoding Method: to set magnetic stripe encoding method for each track

Normal: to encode on LoCo Card forwards

Reverse: to encode on LoCo Card backwards

Bit: to encode on LoCo Card in Bit

HiCo Normal: to encode on HiCo Card forwards

HiCo Reverse: to encode on HiCo Card backwards

HiCo Bit: to encode on HiCo Card in Bit

Magnetic Card Flip R/W: to set back side image printing when magnetic encoding

Magnetic Simple Encoding: Set fast encoding and printing

Magnetic Auto Encoding: Set auto coercivity.

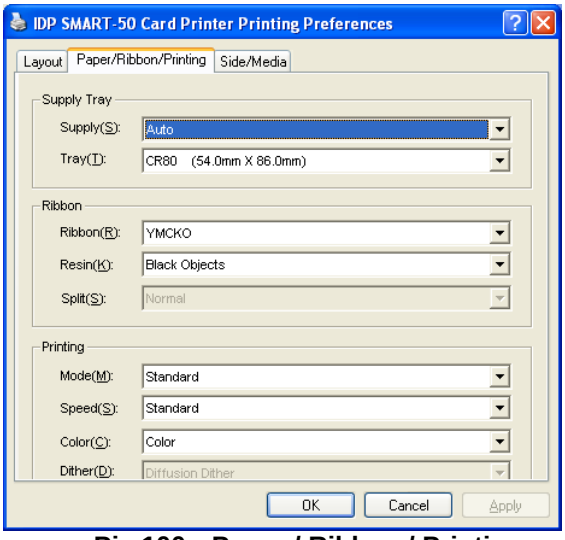
Magnetic Encoding Ballys mode: Set Ballys mode

Manual Magnetic Stripe encoding: to put in data on magnetic stripe manually

Not Use: not to use magnetic stripe encoding

Encoding and Printing: to print after magnetic stripe encoding

Encoding or Laminating only: encoding magnetic or laminating. without printing



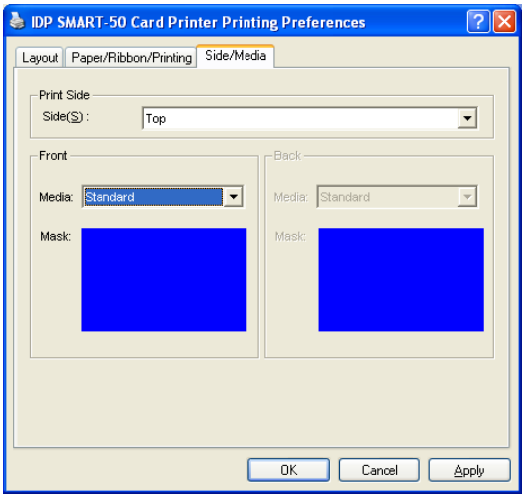
Pic.100 Paper / Ribbon / Printing

3.2.1.3. Paper / Ribbon / Printing

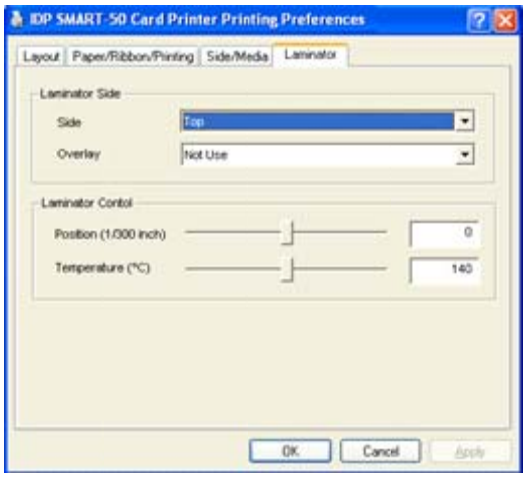
- **Supply Tray**
  - **Supply**
    Please select “CR-80” because SMART-50 has 1 input hopper.
  - **Tray**
    Please select “Auto” because SMART-50 supports CR80 cards only.
- **Ribbon**
  - **Ribbon**
    It shows the type of installed ribbon. You don’t need to select this option as SMART-50 recognizes ribbon automatically with RF Tag.
  - **Resin**
    You can set the method to extract resin black when you use design programs. (If you use Smart Design, you don’t need to select this option.) It will be set automatically.
    Black Objects: to extract resin black automatically for text, line, box, circle, binary images, etc.
    Black Texts: to extract resin black for text only
    Black Dots: to extract resin black for all of black
    Not Use: not to extract resin black
  - **Split**
    You can set the both sides (Front:YMCO, Back:K) to save color ribbon(YMCKO, HYMCKO, BYMCKO). It is only activated while printing both sides option is set.

- **Printing**
  - **Mode**
    Set printing mode
    Standard: Default print mode. Prints all area of priniting
    Partial: Partial print mode. It is printed partially for the print area only. Printing speed can be faster than standard mode.
  - **Speed**
    Set printing speed and quality.
    Standard: Default print mode and best quality setting option of printing
    High: Fast print mode. This option can be used with only K and KO ribbo. Printing quality might be lower than Standard.

  - **Color**
    You can select color or black&white print. (“Color” option is available only with color ribbon.)
  - **Dither**
    There are 3 possible selections, Threshold, Random, and Diffusion Dither. It is performed with K and KO ribbon only. (Please select “Diffusion Dither” for high quality.)



Pic.101 Side / Media



Pic.102 Laminator

3.2.1.4. Side / Media

To set printing side and printing mask.

- Print Side

You can select one side printing or both sides printing (It is possible only when you have a flipper.)

- Front / Back

You can use a predefined mask or user defined mask (white card, smartcard, Magnetic stripe card, etc.) on front or back side.
You can define a mask. User defined mask uses BITMAP file (1012 X 636 pixels).
Blue (RGB(0,0,255)): Print and Overlay
Pink (RGB(255,0,255)): Print only
Black (RGB(0,0,0)): Print, Overlay and Florescent

3.2.1.5. Laminator

This tap will be created only when SMART-50L printer is connected to PC. In the case of normal SMART-50 Printer, this tap will be not displayed.
To set Laminator printing options.

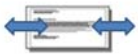
- **Laminator Side**

You can select not use, top side, bottom side and both sides printing

- **Overlay**

You can select whether overlay prints or not.
Default setting is no overlay when laminating and we recommend to use the default value.

- **Position**



You can set Laminating start position of width and the values can be set from -50 to 50. The number is 1/300 inch.

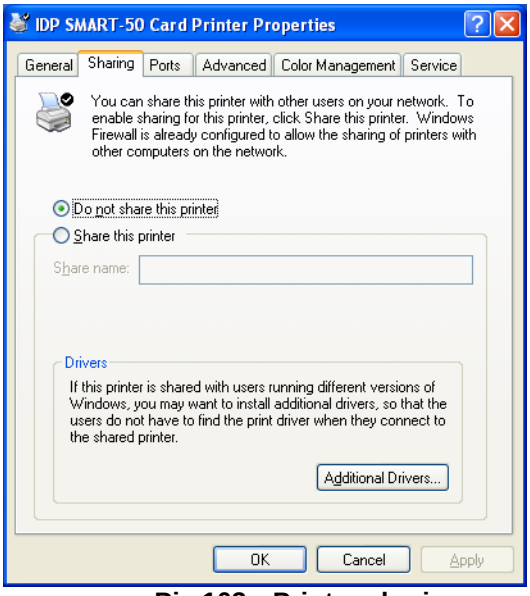
- **Temperature**

You can set Laminating temperature and the values can be set from 100℃ to 180℃.

- **Laminating Only**

You can skip printing and do laminating only by setting a value in
Printer setup - Print preferences - Advanced Setup - Encoding and Laminating - Set the value as “Encoding and Laminating Only”

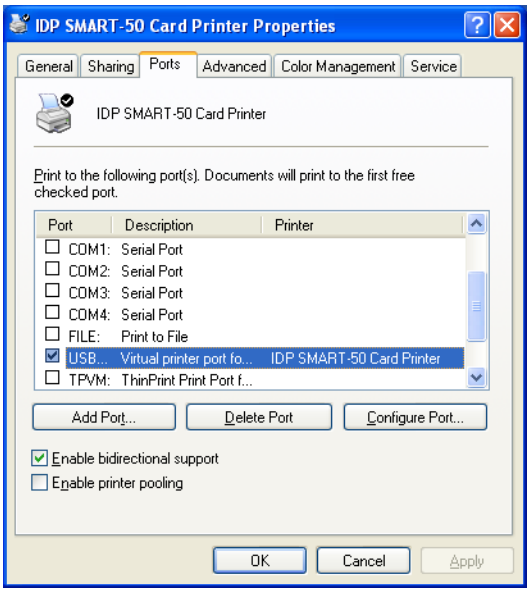
3.3. Other settings



Pic.103 Printer sharing

3.3.1. Sharing

You can share a printer with Sharing tab via Network. Default is “Not sharing”

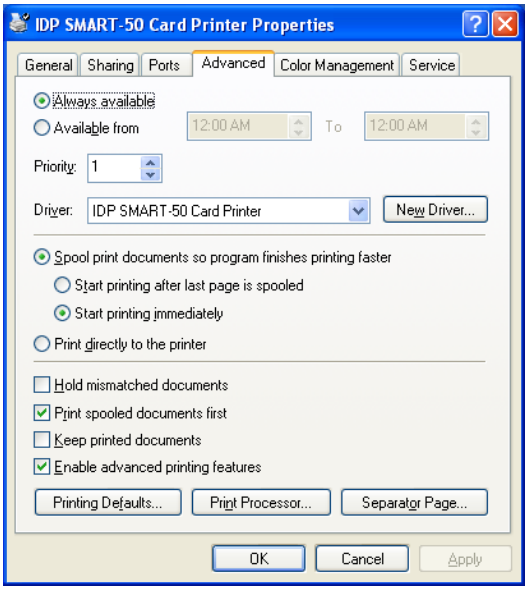


Pic.104 Ports

3.3.2. Ports

Port tab shows which port is connected with SMART-50. SMART-50 has connection with USB Virtual printer port as Pic.101 because SMART-50 uses USB connected to PC.

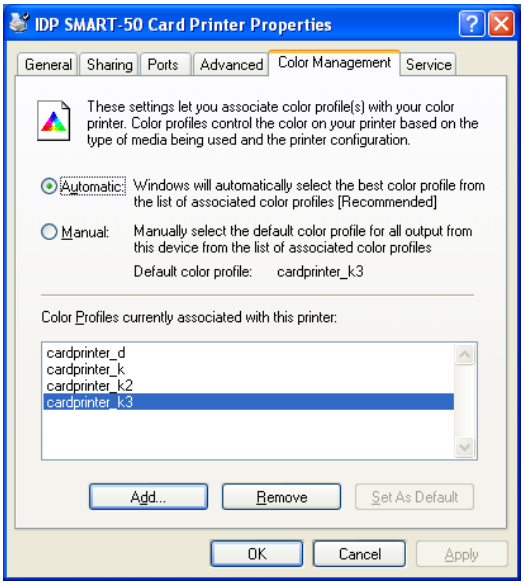
(Caution! This port is selected automatically. It is recommended to maintain default.)



Pic.105 Advanced

3.3.3. Advanced

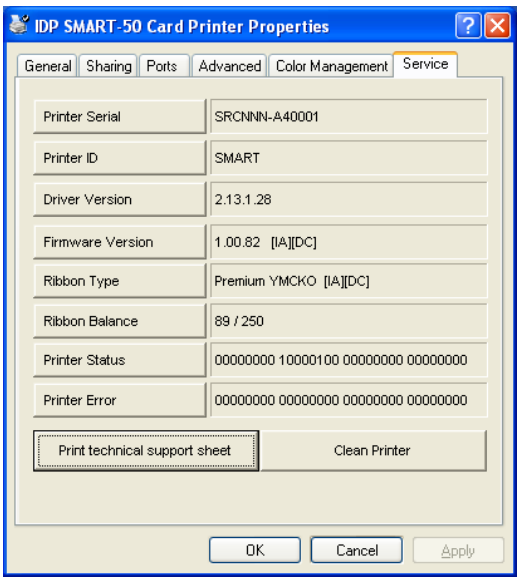
It is available for Working Time setting, Priority order, Spool print etc. in “Advanced” tab. “Advanced” setting follows MS Windows standard. If you want to change the setting, please refer to the Window manual.
(It is recommended to maintain default.)



Pic.106 Color Management

3.3.4. Color Management

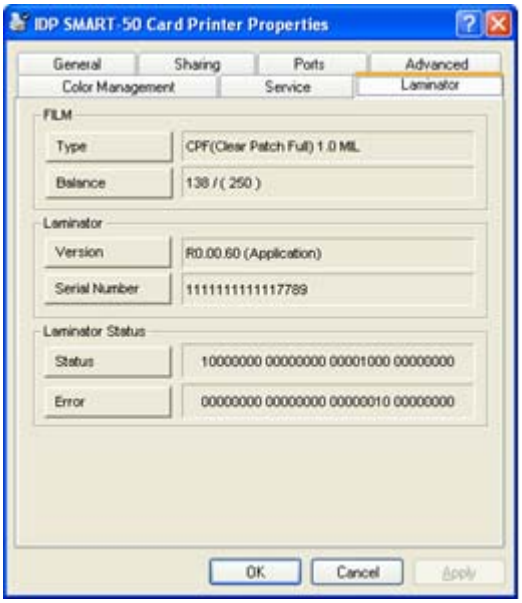
In “Color management” tab, you can select color management profile fit to the printer.
SMART-50 uses color profile to express optimal color. The driver selects color profile automatically to fit each ribbon.
(It is recommended to maintain default.)



Pic.107 Service

3.3.5. Service

You can recognize printer serial, printer ID, driver version, firmware version, type of ribbon & balance and printer’s status.
You can print the “technical support sheet” on a card to check printer’s setup value.
To clean printer, please insert a cleaning card in a hopper and click “Clean Printer”. For further details, please refer “6.1. Cleaning Printer”.
Please refer “4.2.6 Printer Status” for numbers of “Printer Status” and “Printer error”



Pic.108 Laminator

3.3.6. Laminator

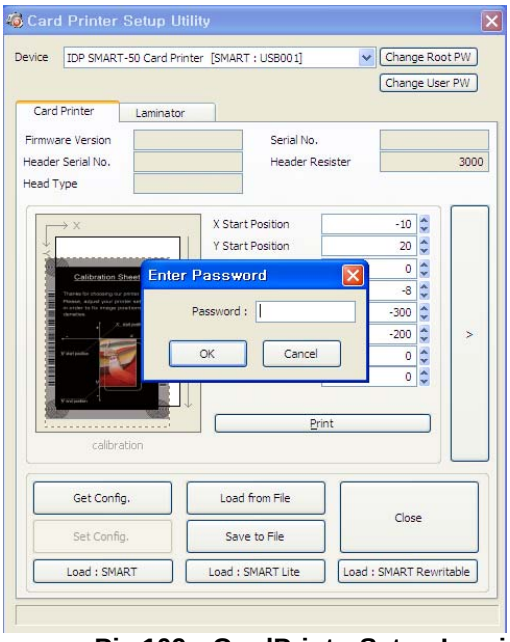
This tap will be shown only when SMART-50L printer is connected to PC. You can recognize laminator film's type, balance, laminator's version, serial number status.

4. Utilities

4.1. Card Printer Setup

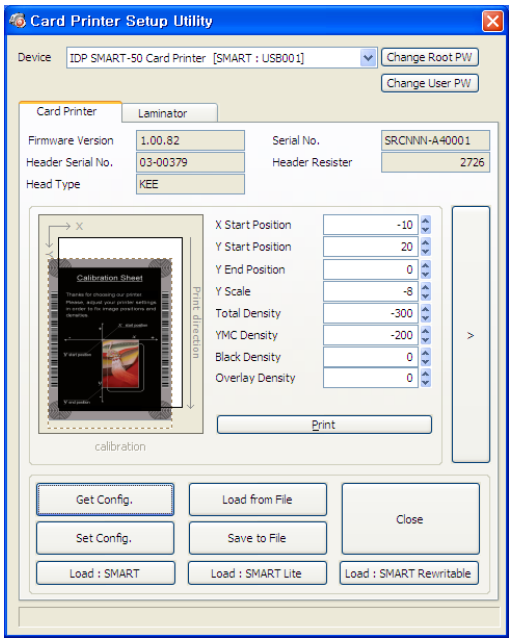
SMART-50 is produced with optimized setting. You need to adjust setting value if required or spare parts are replaced using CardPrinterSetup in our Installation CD. You can adjust following settings with CardPrinterSetup.

4.1.1. Run CardPrinterSetup



Pic.109 CardPrinterSetup Log-in

Password input window is displayed when you run this program. If you input the correct password, the recorded setup value will be shown and you can change values. The password is saved to SMART-50 printer. If you use another PC with same printer, previous password is required to run this program. (Default password is none. Please press OK if you have not set password.)

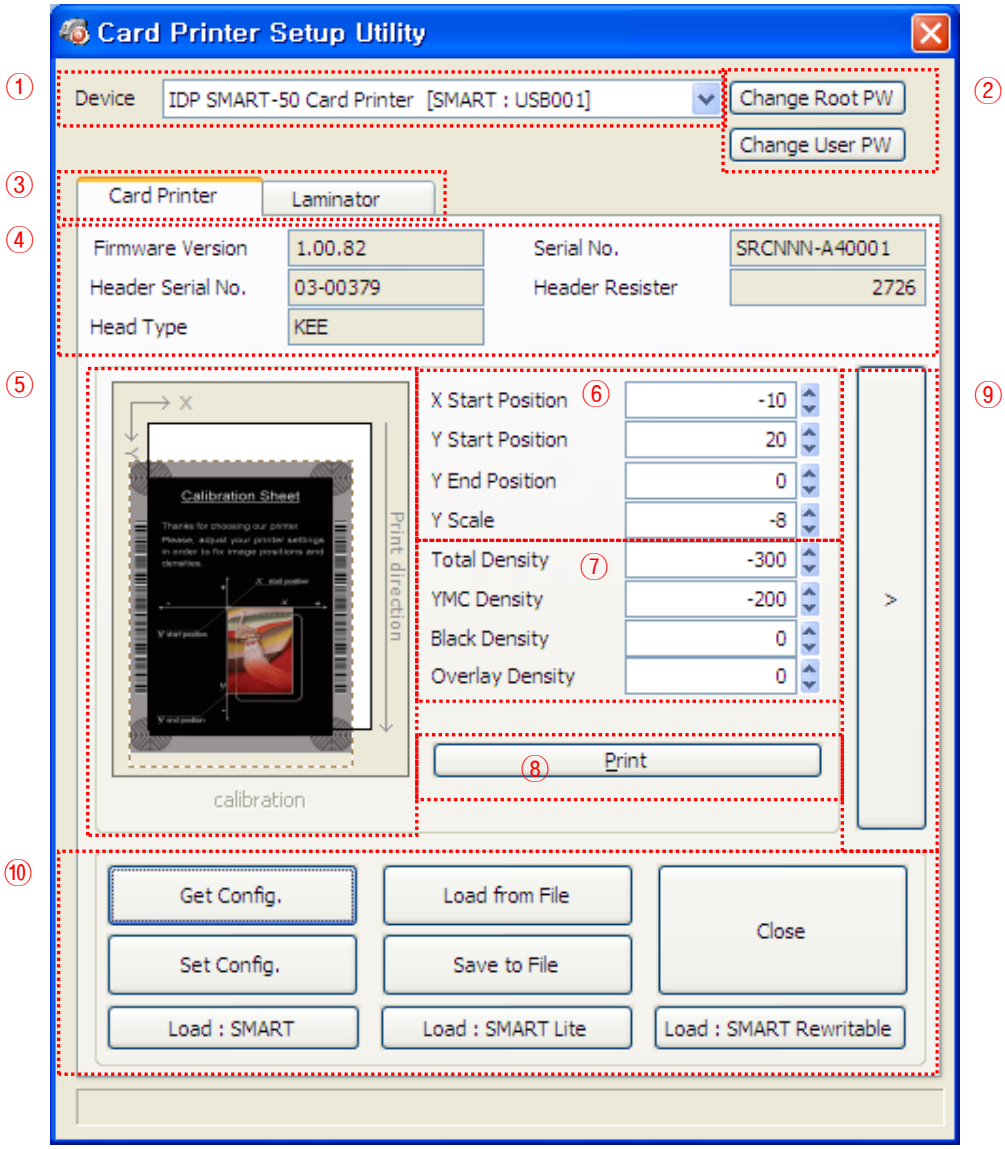


Pic.110 CardPrinterSetup start

When you are successful to log-in, you can set values shown as Pic.107.

4.1.2. Card Printer

4.1.2.1. Basic Setup



Pic.111 CardPrinterSetup – Card Printer Basic Setup

① To show connected printers
Device: You can select a printer using pull-down menu. “IDP SMART-50 Card Printer” is a name of printer. “SMART228” is printer ID, “USB001” is connected port.

② To set administrator password and user password.
Change Root PW: To set administrator (root) password. This password is used to verify user authority for CardPrinterSetup and User Authentication. Also it is required for User password management. (Please set password for security use.)
Change User PW: To set user password for User Authentication.

③ Click “Card Printer” tap.(If laminator is installed, you can setup laminator setting value by “Laminator” tap.

④ To show firmware version, serial number of printer and serial number, resistor & type of print head.

⑤ To show print area. It shows exaggeratingly for user convenience.

⑥ To set print area. Please set it properly to print on an entire card because SMART-50 is a direct thermal card printer. When you click "⑦ Print", a card is printed as like "④ example". Please set values properly that all circles of each corner are printed and blank spaces are 0.4mm ~ 0.5mm in the top and the bottom of a card. Please set values by following order.

X Start Position: Please set right and left properly by adjusting X position.

Y Start Position: Please set the start position of printed example image and blank space in the top is 0.4mm ~ 0.5mm.

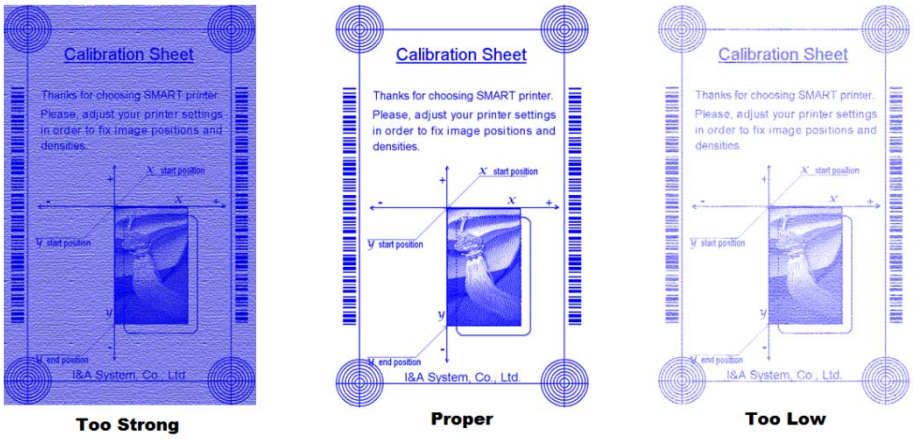
Y End Position: Please set the end position of printed example image and blank space in the bottom is 0.4mm ~ 0.5mm. It is recommended to set bigger value for "Y scale" than default.

Y Scale: Please set to show circles in the bottom.

⑦ To set density. SMART-50 enables to set different density for each color, resin black and overlay. So, please set each density for high quality. Please optimize the quality by adjusting each value. To optimize, you repeatedly adjust the density and print a Calibration card and check the print state until you get the optimum.

If your printer is SMART-30 R model, please do not install ribbon. You can set density with Rewritable cards. Please adjust total density only.

Total Density: To set all of the density (Color, Black and Overlay) at one time.
If your printer is SMART-30 R model, when the density is too strong, you will have darker background color. (Background color may vary depending on card type.) When density is proper, texts and images are printed clearly and there is no background color. When density is too low, texts and images are printed dull.



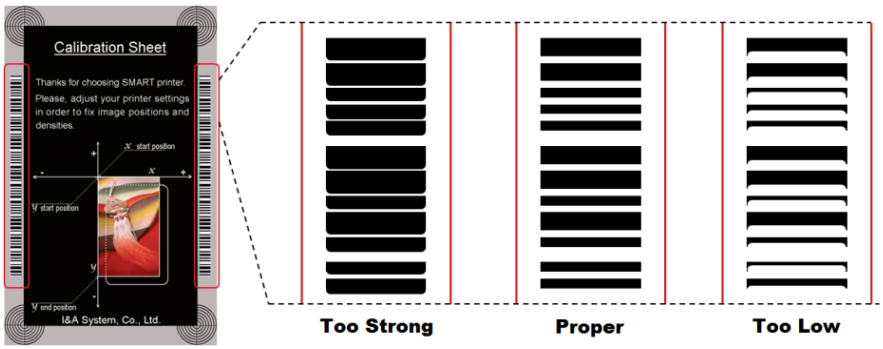
Pic.112 SMART-30 R density

YMC Density: To set color density. Please maximize YMC density as you can, which enables to express range of color and vivid images. If it is too strong, green or red marks are appeared. If it is too weak, the print quality will be dull. (Please refer Pic.109.)

Too Strong **Proper** **Too Low**

Pic.113 Color density

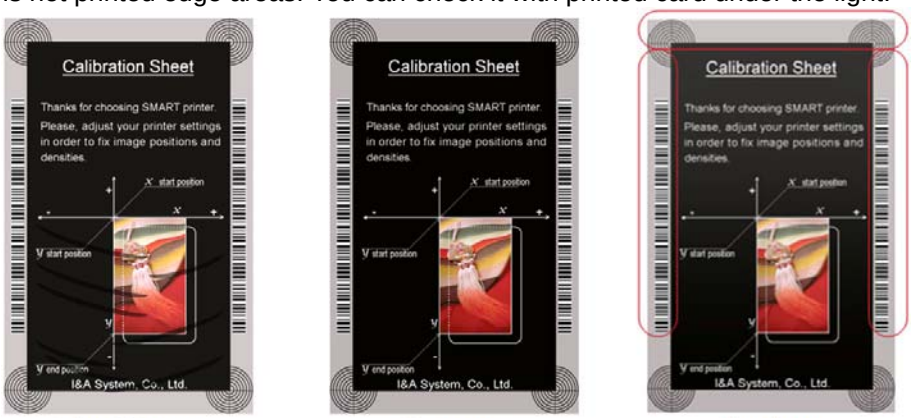
Black Density: To set resin black density. In Pic.111, barcode is printed to express density. When density is too strong, barcode is printed too thick. When density is too weak, barcode is too thin. Please adjust resin black density to express clear barcode. Please refer following pictures.



Too Strong **Proper** **Too Low**

Pic.114 Resin Black density

Overlay Density: To set overlay density. Please set it when overlay is printed on surface regularly. If it is too strong, it is hazy and marks are appeared. If it is too weak, overlay panel is not printed edge areas. You can check it with printed card under the light.



Too Strong **Proper** **Too Low**

Pic.115 Overlay density

⑧ To print calibration card.

⑨ To show advanced Setup.
(It is recommended not to set advanced setup.)

⑩ To load or save values.
Get Config.: to get values from current printer

Set Config. : to set values to current printer

Load from File: to load values from file

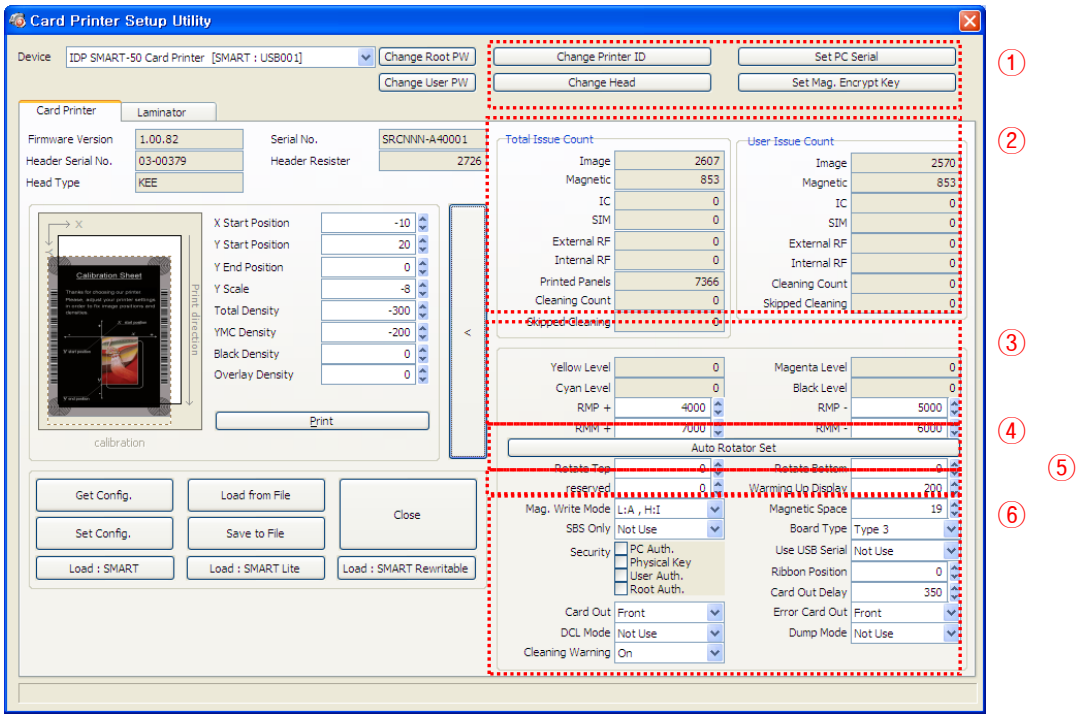
Save to File : to save values to file

Load Default : to load default. Please adjust values again after load default.

Close : to close CardPrinterSetup

4.1.2.2. Advanced Setup

You can set more values.



Pic.116 CardPrinterSetup – Card Printer Advanced Setup

① You can set Printer ID, PC serial, Print head and Magnetic encryption key.

Change Printer ID: When SMART-50 is used by SDK, you can set unique ID for SMART-50 printer regardless of whether it is connected by USB or what IP address is. It is useful to connect and use several printers. Default is “SMART-50”.

Set PC Serial: One of security function. You can use a printer with specific PC.
It is activated when you click “Set PC Serial” after “**PC Authentication**” of ⑥ is ticked and rebooted. At that time, the specific information of used PC is saved to SMART-50 printer.

Change Head: When you replace thermal print head, you must change head information for optimal quality. Please change head serial number, resistor and type of head in the Change Head Dialog window after click “Change Head”.

Set Mag. Encrypt Key: One of security function. When you use SDK, you can encrypt magnetic stripe encoding data transmitted by USB. You can define and save the encryption key to SMART-50 using “Set Mag. Encrypt Key”.

② To show how many cards are issued with SMART-50 printer. “Total Issue Count” is the number of issued cards from factory shipment, “User Issue Count” is the number of issued cards from replacing head. When you replace a head, please initialize the number by ticking “Reset User Issue Count”.

③ To show color and motor management. SMART-50 recognizes ribbon color automatically and controls motor by ribbon remaining. “Yellow Level”, “Magenta Level”, “Cyan Level”, “Black Level” are default value for ribbon and user does not change values. “RMP+”, “RMP-“, “RMM+”, “RMM-“ are necessary variables to control ribbon motor. Please do not change values for them as it affects card quality.

④ SMART-50D is made by attaching a flipper in SMART-50, so you need to adjust it to be tuned in the horizontal. “Rotate Top” is a value when the card of top side is in line. “Rotate Bottom” is a value when card of bottom side is in line. Please click “Auto Rotator Set” when error is occurred during a card moved to or from a flipper.

⑤ Please refer as below for other values.

Reserved: Not used

Warming Up Display: If you use SMART-30 R, LED buttons are blinked during print head is warming up. You can adjust the timing of LED blinking by adjusting values of “Warming Up Display”. It becomes faster as the value is smaller.

Mag. Write Mode: You can order the way how to encode magnetic stripe.
“L:A, H:I”: encodes 3 tracks at once for LoCo card and encodes at twice by dividing 1,3 and 2 track for HiCo cards.

Magnetic Space: The distance of magnetic stripe when you encode.

SBS Only: Please enable it when you issue cards with software programed by SDK. This option disables printer device driver.

Board Type: to choose they type of mainboard. Please do not change it.

Security: There are several ways to set a security function for SMART-50.

PC Authentication: You can use a printer with specific PC. It is activated when you click “Set PC Serial”.
Physical Key: You can set this option when physical key is installed.
User/Root Authentication: You can set passwords for User and Administrator.

Use USB Serial: When SMART-50 is connected to USB, it transmits the USB serial number to PC. Default is the same number used by all SMART-50. Please set this option when you use multiple SMART-50 printers connected to 1 PC via USB. It enables unique serial numbers for each USB.

Ribbon Position: To set the ribbon position on card. Please set it default.

Warming Up Temp.: To control the temperature of warming up before printing. For SMART-30 R, you need to warm up print head to print high quality. We recommend warming up to 50 degrees.

Card Out Delay: To set timing of hopper motor for ejecting card. Please set it default.

Card Out: to set the way to eject cards.

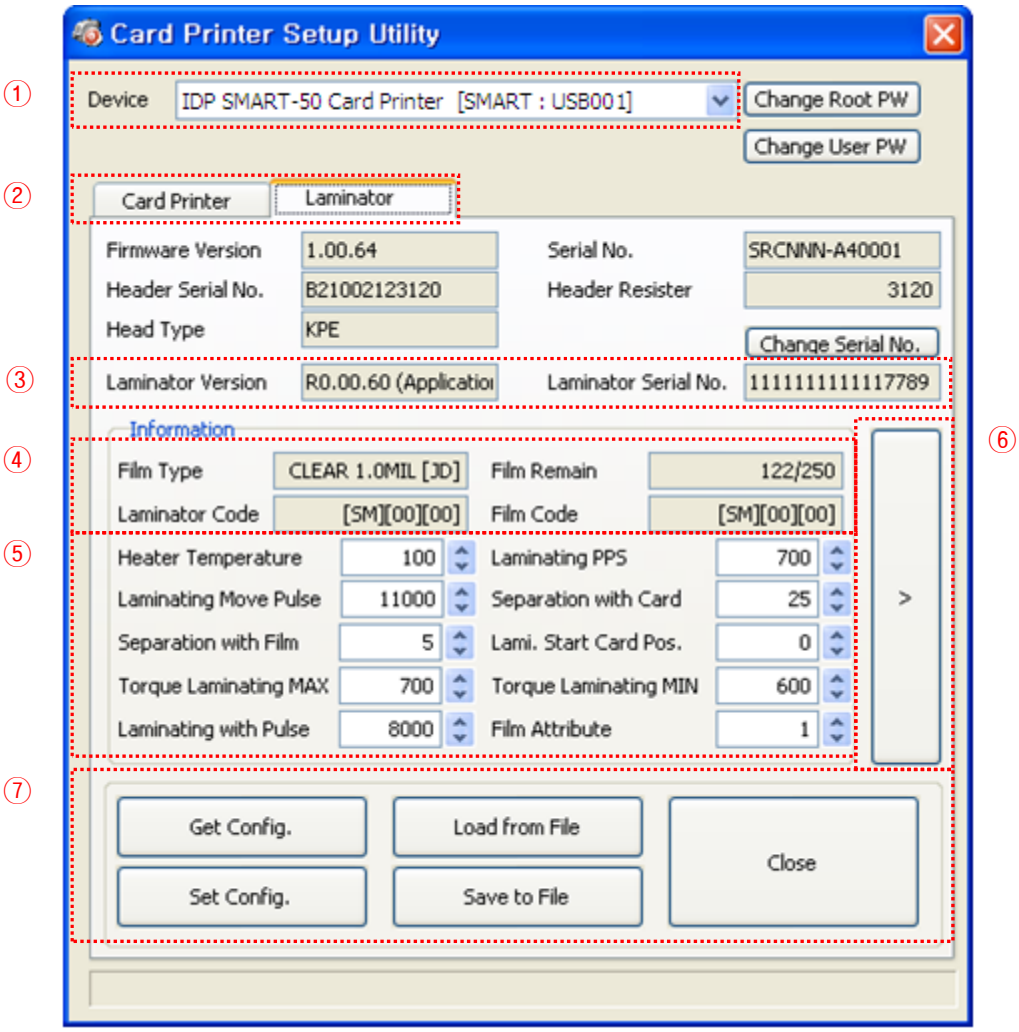
Error Card Out: to set the way to eject error cards.

DCL Mode: When you use SDK and print cards with DCL mode, you don’t need to install printer device driver.

Dump Mode: It records log data.

4.1.3. Laminator

4.1.3.1. Basic Setup



Pic.117 CardPrinterSetup – Laminator Basic Setup

① The combo box shows connected printers

② Click Laminator Tap.

③ It shows the information of installed laminator such as firm-ware version, serial number. If you click “Change Serial No.” button, you can change serial number.

④ The fields show laminator film’s type, balance, code and laminator code.

Film Type : It shows installed film’s type and vendor code.

Film Remain : It shows installed film’s total number and balance.

Laminator Code : It shows Laminator’s code, vendor and local code.

Film Code : It shows installed film code, vendor and local code.

⑤ You can change the values according to the installed film type.

Heater Temperature : It is for laminating temperature.

Laminating PPS : Laminating speed.

Laminating Move Pulse : The distance of laminating movement.

Separation with Card : After laminating and removing film, the value changes the distance of card movement

Separation with Film : After laminating and removing film, the value changes the Distance of film movement.

Lami. Start Card Pos : The value is for laminating start position.

Torque Laminating Max : Maximum torque of motor while laminating.

Torque Laminating Min : Minimum torque of motor while laminating.

Laminating with Pulse : The value is for change laminating width.

Film Attribution : It changes film attribution.

⑥ It shows “Advanced Setup” window.

⑦ “Save” or “Load” the values.

Get Config : Read the values from connected printer.

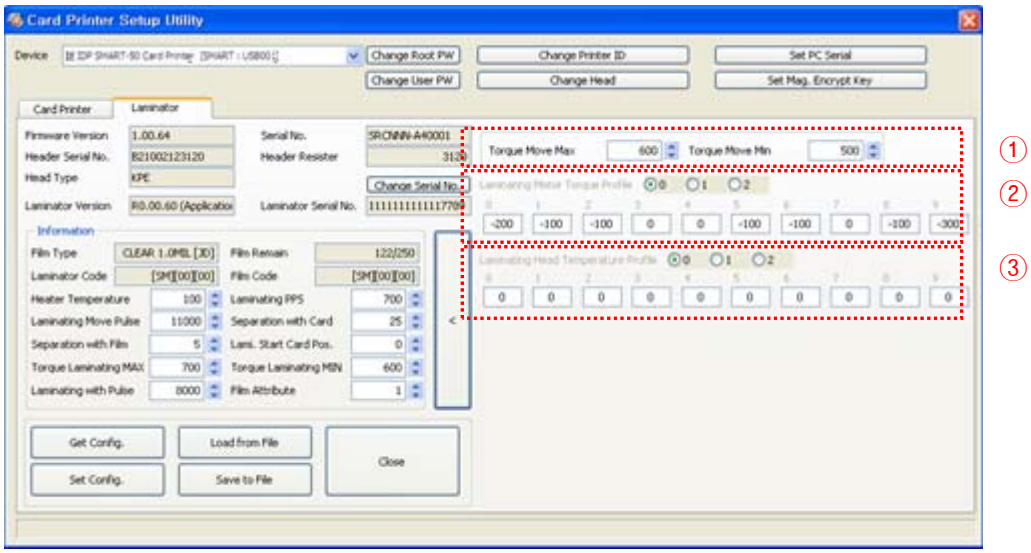
Set Config. : Set the values to connected printer.

Load from File : Load the values from saved file.

Save to File : Save the values into a file.

Close : Close the program.

4.1.3.2. Advanced Setup



Pic.118 CardPrinterSetup – Laminator Advanced Setup

① It shows total laminating count.

② The values are for setting motor torque of film movement.

Torque Move Max : Change Maximum motor torque

Torque Move Min : Change Minimum motor torque

③ The values are for setting motor torque of laminating.
You can set the values of each section.

④ You can set “Head” temperature of laminating.
You can set the values of each section.

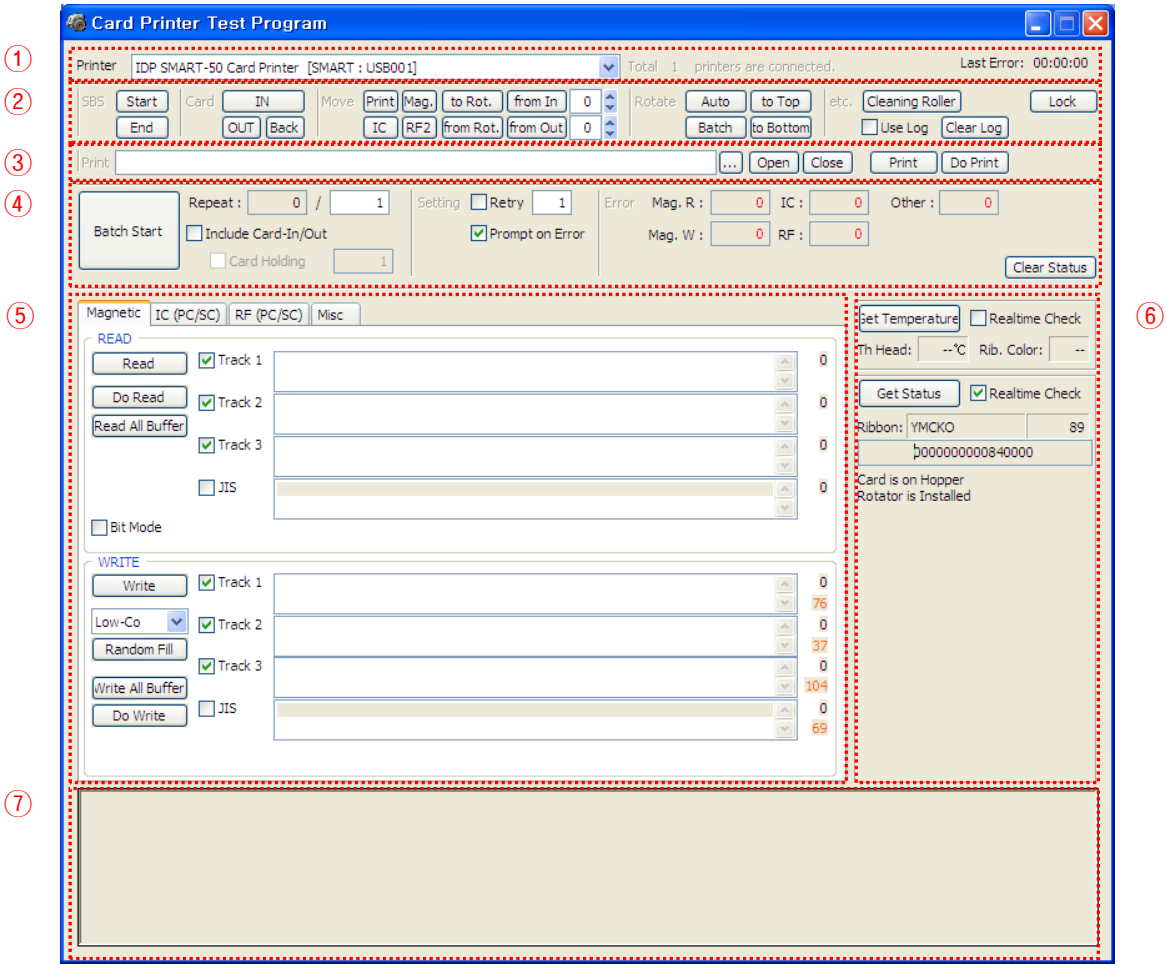
⑤ Rotator position

4.2. Card Printer Test

Basically Card Printer use standard printer device so you can be used same as general paper printer. In the case of magnetic stripe, contact, contactless encoder option, you will need to install appropriate driver and operate individually. Encoding operation will be controlled by “CARD PRINTER SDK”. You can test all feature of printer by Card printer Test. Card Printer Test program is developed by using “SMART Printer SDK”

4.2.1. CardPrinterTest

When CardPrinterTest is run, all function can be tested individually.



Pic.119 CardPrinterTest

① **Select Printer:** select printer to test. In the Pic.116, “IDP SMART-50 Card Printer” is the Printer name, SMART228 is the Printer ID, and USB001 is the connected port.

② **Control :** To execute each step to test

③ **Print:** Print test with CSD file which is designed by Smart Design program.

④ **Batch Start:** Repeat selected encoding test by “⑤ Encoding”

⑤ **Encoding:** Encode Magnetic Stripe, Contact Card, Contactless Card

⑥ **Printer Status:** Check printer status.

⑦ **Message:** Description of status by log.

4.2.2 Select printer and control

When you execute CardPrinterTest, it will search connected printers by USB and Network automatically and SMART-50 printer connected to USB has higher priority. Other printers could be selected by pull-down menu. You can test all function with connected printer.

. Control is consisted by SBS(Step by Step), Move, Rotate, Etc. section and you can control printer by each step.

- **SBS**
  SBS is to operate SMART-50 printer in SBS(Step-By-Step) mode which you can control the printer using commands. In SBS mode, after printing data transmission, printing a card will be run only by clicking “DoPrint”. It is the main difference between NORMAL mode and SBS mode. When you click “Start”, SMART-50 is operated in SBS mode, and existing spooled data will be eliminated. To exit SBS mode, click “Stop”.

- **Card**
  Card is to bring a card into printer and eject a card. “In” is to move a card from input hopper to printer and “Out” is to move a card from printer to output hopper. In case the flipper is installed, “Back” ejects a card to the back side.

- **Move**
  Move is to move a card to specific position in the inside of printer. “Print” is to move a card to the printing position, and “Mag.” is to the magnetic encoding position, and “IC” is to the contact smartcard encoding position, and “RF” is to the contactless smartcard encoding position. “To Rotator” is to move a card from printer to flipper and “From Rotator” is to move a card from flipper to printer. “from In” is to move a card from the card in sensor to where you define position, and “from Out” is to move a card from the card out sensor to where you define position.

- **Rotate**
  Rotator is to flip over a card in the printer installed flipper. “Auto” is to move a card from printer to flipper and flip over a card and move a card to the printing position automatically. “Batch” is to repeat “Auto” as many times as the number of set. “To Bottom” is to turn to the backside of card and “To Top” is to turn to the front side of card.

- **Etc**
  “Cleaning Roller” is to clean the roller by cleaning card automatically. “Use Log” is to display log in message space.

4.2.3 Print

Print can be done through the CSD file which is designed by Smart Design program. Following the steps in this section.

1. Click **“…”** button and select the CSD file.
2. Click **“Open”** button to prepare CSD file to print.
3. Click **“Print”** Button to move print data to spool. In the NORMAL mode, Click “Print” button to print a card, but in the SBS mode, “Print” button to transmit a printing data from PC to printer and wait for printing. Therefore, you must click “DoPrint” to print in SBS mode. This function is for detail control of printer.
4. Click **“Close”** button to close CSD file.

4.2.4. Batch

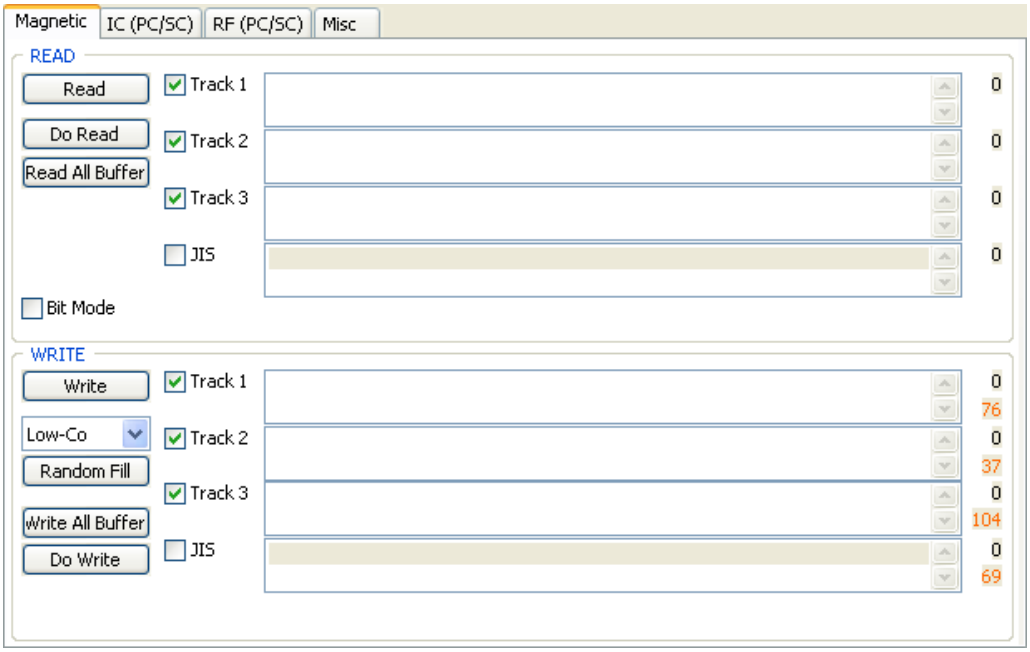
Batch is to repeat encoding/decoding test continuously. In the Repeat, you input the number of repeat and click “Batch Start”, then the test is run as many times as the number of set. When you check **“Include Card In/Out”**, each time the printer bring a card from input hopper and perform an encoding

test and eject the card. But if not, encoding test will be done only by one card. At that time, if there is no card in the printer, the printer bring a card into the printer from input hopper and repeat the encoding test on the card, and if there is a card in the printer, the encoding test is performed on the card repeatedly. **"Card Holding"** is activated when "Include Card In/Out" is ticked. When "Card Holding" is ticked and the repeat number is set, the printer repeats the encoding test as many times as the number of set in the "Card Holding" without ejection. When it is completed, the printer ejects the card and brings a new card into the printer and starts testing.
In the Setting, **"Retry"** is to retry the encoding test when the error occurred. **"Prompt on Error**" is to display Pop up Message when the error occurred. If not, Error number will be counted without message. The number of error is displayed at Error section**.**

4.2.5. Encoding

Magnetic: Magnet Stripe Encoding

"Read" is to read and display the data from magnetic stripe card. It is composed of "Do Read" and "Read All Buffer" and runs "Do Read" and "Read All Buffer" sequentially.
"Do Read" is to read the data from magnetic stripe card and store the data in the buffer.
"Read All Buffer" is to transmit the date stored in the buffer to PC. If the track number is ticked, the data of the ticked track is only transmitted to PC.
"Write" is to write the data to the magnetic stripe. It is composed of "Write All Buffer" and "Do Write" and runs "Write All Buffer" and "Do Write" sequentially.
"Write All Buffer" is to transmit the data to the buffer.
"Do Write" is to write the data stored in the buffer to the magnetic stripe of card. You can choose the magnetic foil type (LoCo or HiCo) and the track of magnetic stripe. **"Random Fill"** is to create a random magnetic encoding data for testing.
Batch process repeats the following steps sequentially, **Card "IN" → Move "Mag" → Magnetic "Random Fill" → Magnetic "Write" → Magnetic "Read" → Card "OUT"**.



Pic.120 Magnetic stripe encoding

IC(PC/SC) : Contact Smartcard Encoding

In SMART-30 printer, a contact smartcard encoder can be installed and SMART-50 printer supports the contact smartcard encoder in the printer inside and the SIM encoder on the right of front side. "IC(PC/SC)" is to test a contact smartcard and SIM encoding.
"Batch" is applied only to the contact smartcard encoding because SIM encoder is installed outside and can't move a card automatically.

"ICH Contact" is to bring the encoder head into contact with the IC chip of smartcard physically.

“ICH Discontact” is to separate the encoder head from the IC chip of smartcard physically**.**
“Init” is to recognize and display the installed contact smartcard reader**.** The recognized encoder will be displayed at the pull down control.

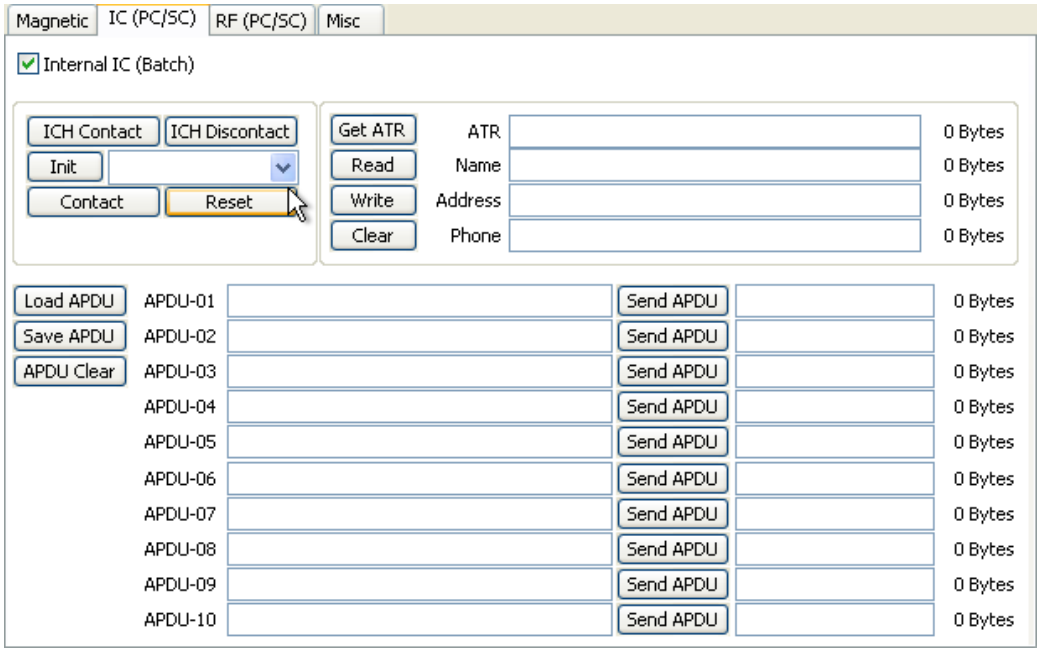
“Contact” is to contact with the smartcard electrically and initialize.
“Reset” is to finish the function electrically. After “Contact”, you can run “Get ATR”, “Read”, “Write” and “Clear”.

“Get ATR” is to read the ATR data.
“Read” and **“Write”** are to read and write the defined data (Name, Address and Phone). These could not be applied to all cards.
“Clear” is to clear the displayed data (ATR, Name, Address and Phone).

In case the data is read and written using APDU, Read/Write can be done by APDU commands.

“Load APDU” is to read the stored APDU commands.
“Save APDU” is to save the displayed APDU commands.
“Clear APDU” is to clear the APDU section.
“Send APDU” is to run the APDU commands.

Batch process repeats the following steps sequentially, **Card “IN” → Move “IC” → IC “ICH Contact” → IC “Init” → IC “Contact” → IC “Reset” → IC “ICH Dis-contact” → Card “OUT”.**



Pic.121 Contact smartcard encoding

RF(PC/SC) : Contactless Smartcard Encoding

In SMART-30 printer, a contactless smartcard encoder can be installed and SMART-50 printer has the internal and external contactless smartcard encoder. RF(PC/SC) is to read and write the contactless smartcard. Using internal encoder, the printer brings a card into the printer from input hopper and encodes a smartcard. Using external encoder, after putting a card on the top cover, you can encode because the antenna installed under the top cover is used. Therefore, “Batch” is applied only to the internal contactless smartcard encoding.

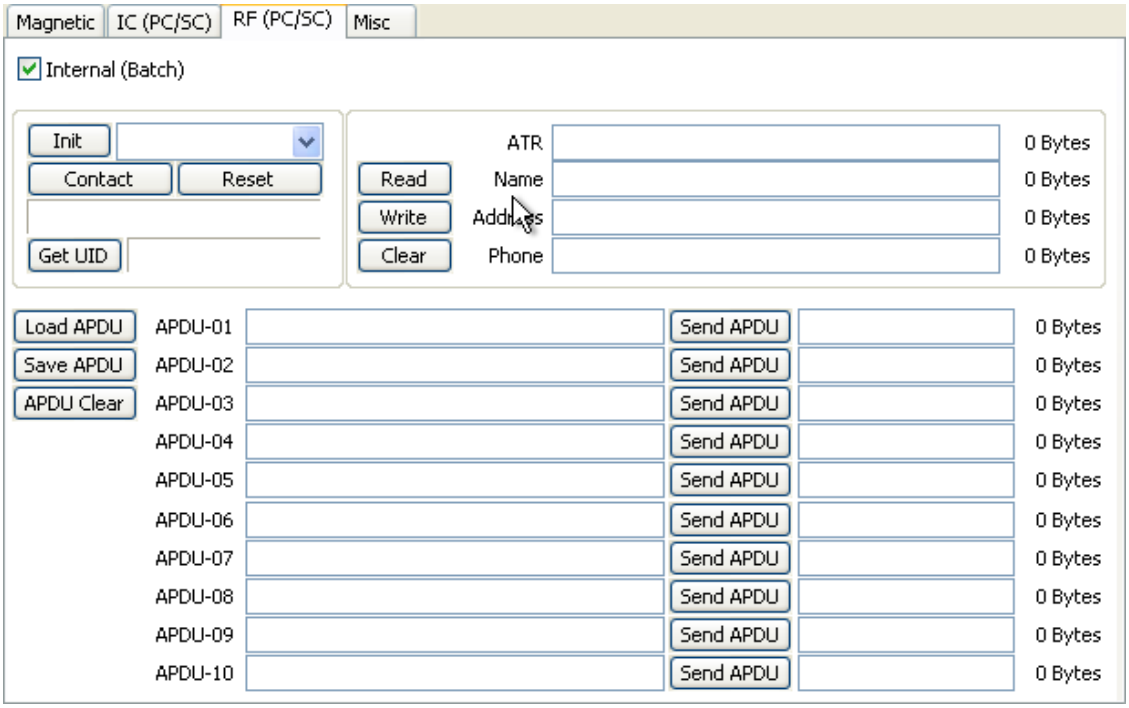
“Contact” is to contact with the contactless smartcard electrically and initialize.
“Reset” is to finish the function electrically. After “Contact”, you can run “Read”, “Write” and “Clear”.
“Get UID” is for getting Chip Serial Number(CSN)
“Read” and **“Write”** are to read and write the defined data (Name, Address and Phone). These could not be applied to all cards.

"Clear" is to clear the displayed data (ATR, Name, Address and Phone).

In case the data is read and written using APDU, Read/Write can be done by APDU commands.

"Load APDU" is to read the stored APDU commands.
"Save APDU" is to save the displayed APDU commands.
"Clear APDU" is to clear the APDU section.
"Send APDU" is to run the APDU commands.

Batch process repeats the following steps sequentially, **Card "IN" → Move "RF" → RF "Connect" → Get UID→ RF "Discontact" → Card "OUT"**



Pic.122 Contactless smartcard encoding

4.2.6. Printer status

"Get Temperature" is to get and display the temperature of Thermal Print Head. When the "Realtime Check" is ticked, it displays the current temperature of Thermal Print Head in real time.

"Get Status" is to get and display the printer status.

Status Code

```
#define  SMSC_M_CARDIN        0x0000000000000001   // Card In
#define  SMSC_M_CARDOUT       0x0000000000000002   // Card Out
#define  SMSC_M_MOVE_PRINT    0x0000000000000004   // Move to print
#define  SMSC_M_MOVE_PRN2ROT  0x0000000000000008   // Move from printer to flipper
#define  SMSC_M_MOVE_ROT2PRN  0x0000000000000010   // Move from flipper to printer
#define  SMSC_M_MOVE_IC       0x0000000000000020   // Move to contact encode
#define  SMSC_M_MOVE_RF       0x0000000000000040   // Move to contactless encode
#define  SMSC_M_MOVE_MAG      0x0000000000000080   // Move to Magnetic encode
#define  SMSC_M_THUP          0x0000000000000100   // Thermal head up
#define  SMSC_M_THDOWN        0x0000000000000200   // Thermal head down
#define  SMSC_M_ICHUP         0x0000000000000400   // Contact head up
#define  SMSC_M_ICHDOWN       0x0000000000000800   // Contact head down
#define  SMSC_M_PRINT         0x0000000000001000   // Printing
#define  SMSC_M_MAGRW         0x0000000000002000   // Read/Write Magnetic data
#define  SMSC_M_SEEKRIBBON    0x0000000000004000   // Ribbon search
#define  SMSC_M_MOVERIBBON    0x0000000000008000   // Ribbon Move
#define  SMSC_M_ROTATORTOP    0x0000000000010000   // Rotate Card up
```

```
#define  SMSC_M_ROTATORBOTTOM     0x0000000000020000   // Rotate Card down
#define  SMSC_S_HOPPERHASCARD     0x0000000000040000   // Card in hopper
#define  SMSC_S_THUP              0x0000000000080000   // Thermal head up
#define  SMSC_S_CARDIN            0x0000000000100000   // Detect Card in
#define  SMSC_S_CARDOUT           0x0000000000200000   // Detect Card out
#define  SMSC_S_ROTATORTOP        0x0000000000400000   // Card front side up in Flipper
#define  SMSC_S_EQUIPROTATOR      0x0000000000800000   // Flipper installed
#define  SMSC_M_RECVPRINTDATA     0x0000000001000000   // Importing print buffer
#define  SMSC_S_HASPRINTBUFFER    0x0000000002000000   // Reserving print buffer
#define  SMSC_M_SBSRUNNING        0x0000000004000000   // Executing SBS Commands
#define  SMSC_S_SBSMODE           0x0000000008000000   // SBS mode
#define  SMSC_S_CASEOPEN          0x0000000010000000   // Case open
#define  SMSC_M_INIT              0x0000000020000000   // Initializing
#define  SMSC_S_TESTMODE          0x0000000080000000   // Test mode
```

From card printer firm-ware version 1.00.60 , some values are changed like bellows from black color texts to red color texts.

```
#define  SMSC_S_THUP              0x0000000000080000   // Thermal head up status
#define  SMSC_S_CLEANWARNING      0x0000000000080000   // Need cleaning of printer

#define  SMSC_S_ROTATORTOP        0x0000000000400000   // Front card up status in rotator
#define  SMSC_S_EQUIPLAMINATOR    0x0000000000400000   // Laminator is installed
```

Error Code

```
#define  SMSC_F_CARDIN            0x0000000100000000   // Error Card in
#define  SMSC_F_MOVETOPRINT       0x0000000200000000   // Card move Error
#define  SMSC_F_CARDOUT           0x0000000400000000   // Card out Error
#define  SMSC_F_MOVETOMAG         0x0000000800000000   // Card move Error (Magnetic)
#define  SMSC_F_MOVETOIC          0x0000001000000000   // Card move Error (Contact)
#define  SMSC_F_MOVETORF          0x0000002000000000   // Card move Error (Contactless)
#define  SMSC_F_MOVETOROTATOR     0x0000004000000000   // Card move Error (Printer to Flipper)
#define  SMSC_F_MOVEFROMROTATOR   0x0000008000000000   // Card move Error (Flipper to Printer)
#define  SMSC_F_THUP              0x0000010000000000   // Thermal head up Error
#define  SMSC_F_THDOWN            0x0000020000000000   // Thermal head down Error
#define  SMSC_F_ICHUP             0x0000040000000000   // Contact head up Error
#define  SMSC_F_ICHDOWN           0x0000080000000000   // Contact head down Error
#define  SMSC_F_ROTATORTOP        0x0000100000000000   // Card rotate up Error
#define  SMSC_F_ROTATORBOTTOM     0x0000200000000000   // Card rotate down Error
#define  SMSC_F_PRINT             0x0000400000000000   // Printing Error
#define  SMSC_F_MAGRW             0x0000800000000000   // Magnetic data Read/Write Error
#define  SMSC_E_SEEKRIBBON        0x0001000000000000   // Ribbon search Error
#define  SMSC_E_MOVERIBBON        0x0002000000000000   // Ribbon move Error
#define  SMSC_E_NOTH              0x0004000000000000   // Uninstalled Thermal head
#define  SMSC_E_THOVERHEAT        0x0008000000000000   // Overheat Thermal head
#define  SMSC_E_EMPTYRIBBON       0x0010000000000000   // No Ribbon
#define  SMSC_F_DATA              0x0020000000000000   // Data Error
#define  SMSC_F_CARDBACKOUT       0x0040000000000000   // Card out to back Error
#define  SMSC_F_CARDERASE         0x0080000000000000   // Cannot Remove data
#define  SMSC_F_INCORRECT_PW      0x0100000000000000   // Incorrect Password
#define  SMSC_F_MAGREADT1         0x0200000000000000   // Read data Error Mag. Track.1
#define  SMSC_F_MAGREADT2         0x0400000000000000   // Read data Error Mag. Track.2
#define  SMSC_F_MAGREADT3         0x0800000000000000   // Read data Error Mag. Track.3
#define  SMSC_F_LOCKED            0x1000000000000000   // Device Locked
#define  SMSC_F_SPOOLFULL         0x2000000000000000   // Exceed Printer Spool
#define  SMSC_F_SET               0x4000000000000000   // Recent motion fail
```

Laminator's Status Code

```
#define  LMSC_M_HEATHDRLIFTUP     0x0000000000000001   // Heat-header is being lifted up
#define  LMSC_M_HEATHDRLIFTDOWN   0x0000000000000004   // Heat-header is being lifted down
#define  LMSC_M_CARDIN            0x0000000000000010   // Card In
#define  LMSC_M_MOVE_LAMINATE     0x0000000000000040   // Moving to laminate position
#define  LMSC_M_FRONTCARDOUT      0x0000000000000100   // Card is being moved out to front.
#define  LMSC_M_REARCARDOUT       0x0000000000000200   // Card is being moved out to rear.
#define  LMSC_M_ROTATE            0x0000000000000400   // Rotating
#define  LMSC_S_WAIT              0x0000000000000800   // Waiting
#define  LMSC_S_CMDRUN            0x0000000000002000   // Command is being executed.
#define  LMSC_M_HEATING           0x0000000000004000   // Heating Heat-header
#define  LMSC_S_CASEOPEN          0x0000000000008000   // Top cover is opened
#define  LMSC_M_LAMINATING        0x0000000000010000   // Laminating
#define  LMSC_S_CARDINSENSOR      0x0000000020000000   // Caught by card in sensor
```

```
#define   LMSC_S_CARDOUTSENSOR      0x0000000040000000      // Caught by card out sensor
#define   LMSC_S_OUTDOORSENSOR      0x0000000080000000      // Caught by stacker open sensor
```

Laminator's Error Code

```
#define   LMSC_E_HEATHDRLIFTUP      0x0000000100000000      // Error while lifting up Heat-header
#define   LMSC_E_HEATHDRLIFTDOWN    0x0000000400000000      // Error while lifting down Heat-header
#define   LMSC_E_CARDIN             0x0000001000000000      // Error while moving card in
#define   LMSC_E_MOVE_LAMINATE      0x0000004000000000      // Error while moving to Laminate position.
#define   LMSC_E_FRONTCARDOUT       0x0000010000000000      // Error while front card out (printer side)
#define   LMSC_E_REARCARDOUT        0x0000020000000000      // Error while rear card out (stacker side)
#define   LMSC_E_ROTATE             0x0000040000000000      // Error while rotating
#define   LMSC_E_INIT               0x0000800000000000      // Error while initializing laminator
#define   LMSC_E_EMPTYFILM          0x0001000000000000      // Film remain count is 0.
#define   LMSC_E_NOFILM             0x8000000000000000      // No film is installed, or cannot
```

4.3. Firmware upgrade

When you run the CardPrinterFirmware, you can see the pop-up window as the Pic. 120.

Device: Select the local printer that you want to upgrade.

Card Printer / Laminator: Select the device you want upgrade.

Device Version: Displays the current firmware version of selected printer.

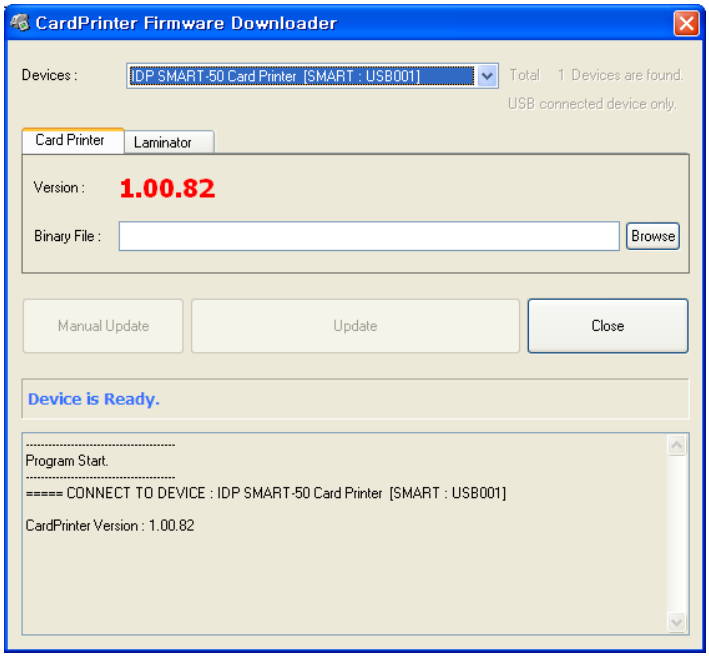
Binary File: Click "Browse" button and select new firmware file to update.

Manual Update: It is used when you want to upgrade manually.

Update: Upgrades automatically. In generally, we recommend upgrading automatically.

Close: Exit.

Message : It displays information of upgrading.

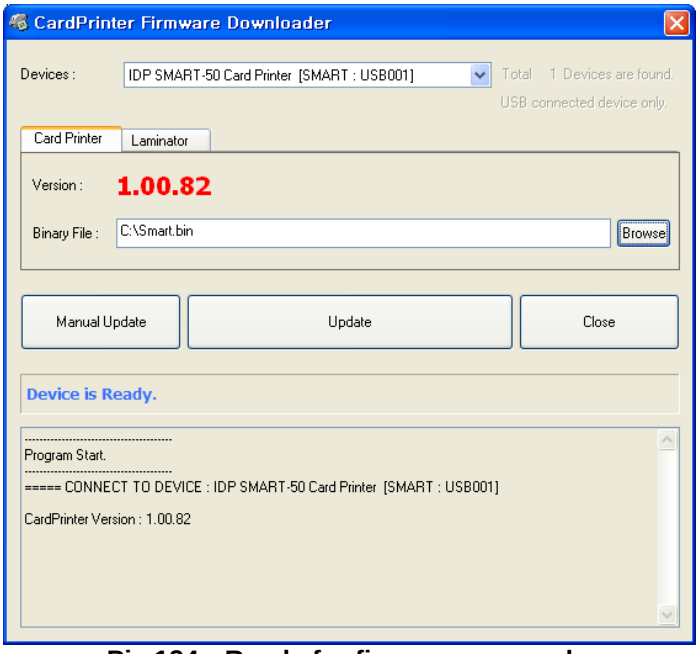


Pic.123 Upgrading printer firmware

4.3.1. Card Printer Firm-ware Upgrade.

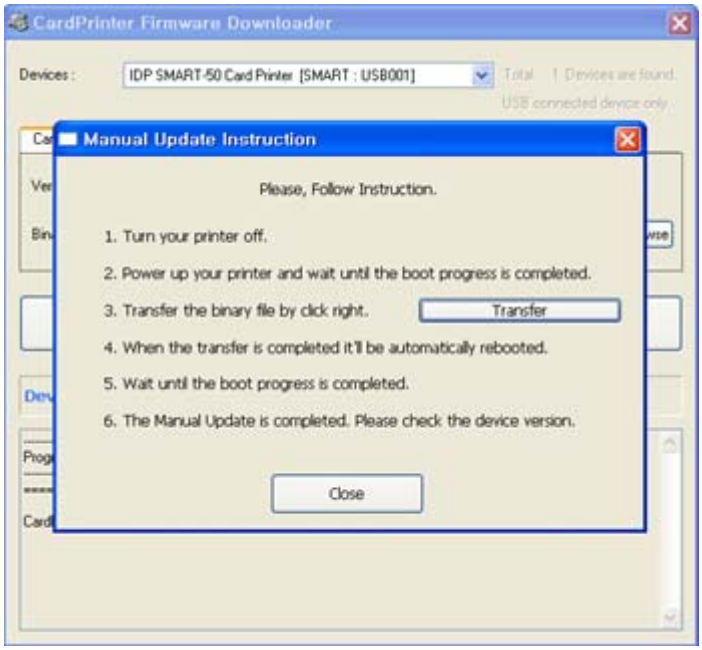
If you click “Browse” and select the new firmware, “Manual Update” and ”Update” are activated. At that time, click “Update” button to upgrade automatically, then the printer is upgraded after rebooting.

(Caution: Please do not close upgrade dialog box until it is completed successfully and do not turn off the printer.)



Pic.124 Ready for firm-ware upgrade

In case there are some problems in the automatic upgrade, you click “Manual Update” and can see the pop-up widow as below picture. It shows procedure of manual upgrade. You can upgrade manually according to this procedure.

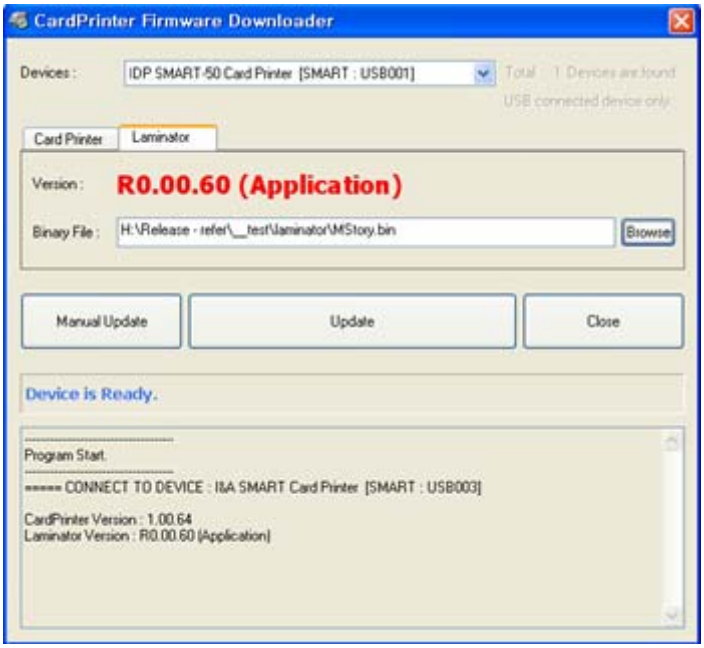


Pic.125 Firm-ware manual upgrade

4.3.2. Laminator Firm-ware Upgrade.

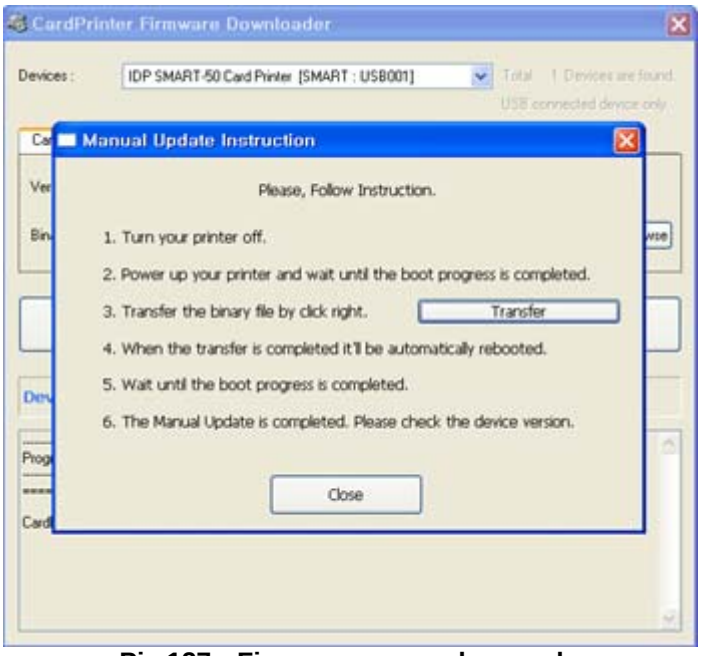
This function is only for card printer firm-ware version 1.00.60 and laminator should be installed to the printer. If you click “Browse” and select the new firmware, “Manual Update” and ”Update” are activated. At that time, click “Update” button to upgrade automatically, then the printer is upgraded after rebooting.

(Caution: Please do not close upgrade dialog box until it is completed successfully and do not turn off the printer.)



Pic.126 Ready for laminator firm-ware upgrade

In case there are some problems in the automatic upgrade, you click “Manual Update” and can see the pop-up widow as below picture. It shows procedure of manual upgrade. You can upgrade manually according to this procedure.



Pic.127 Firm-ware manual upgrade

5. Optional device driver installation

In SMART-50 printer, you can install the optional devices that encode contact smartcard or contactless smartcard. If your purchased SMART-50 printer has optional devices, you should also install the smart card reader drivers.

5.1. Contact smartcard reader

In SMART-50 printer, you can install the two types of optional devices which are contact smartcard reader and mobile SIM smartcard reader. If you have one or more smartcard reader devices on your printer, you should install the smartcard device driver as in the following, and connect SMART-50 printer to your PC.

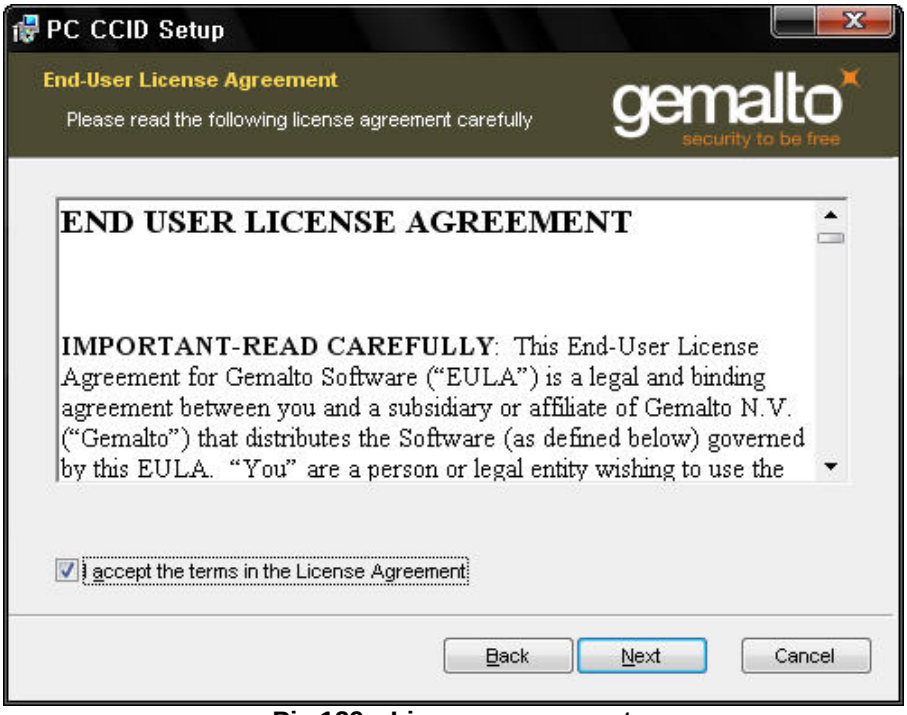
5.1.1. Run the smartcard driver installer

Insert the smartcard installation CD and find "\Options\Gemalto PC Twin" directory on your CD. Find the right directory which is installed OS version on your PC, and run the installer. You can see the smartcard reader driver installation window as the Pic.125. And click "Next".

Pic.128 Contact smartcard reader driver installation

5.1.2. License agreement

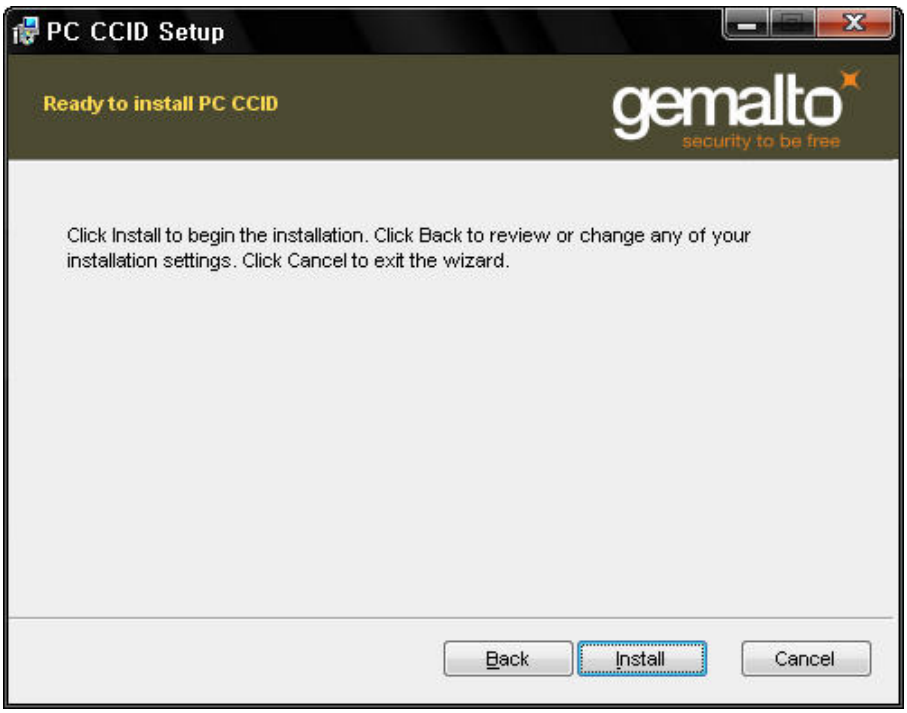
The license agreement window as the Pic.126 is shown. Check at the agreement and click "Next".



Pic.129 License agreement

5.1.3. Installation

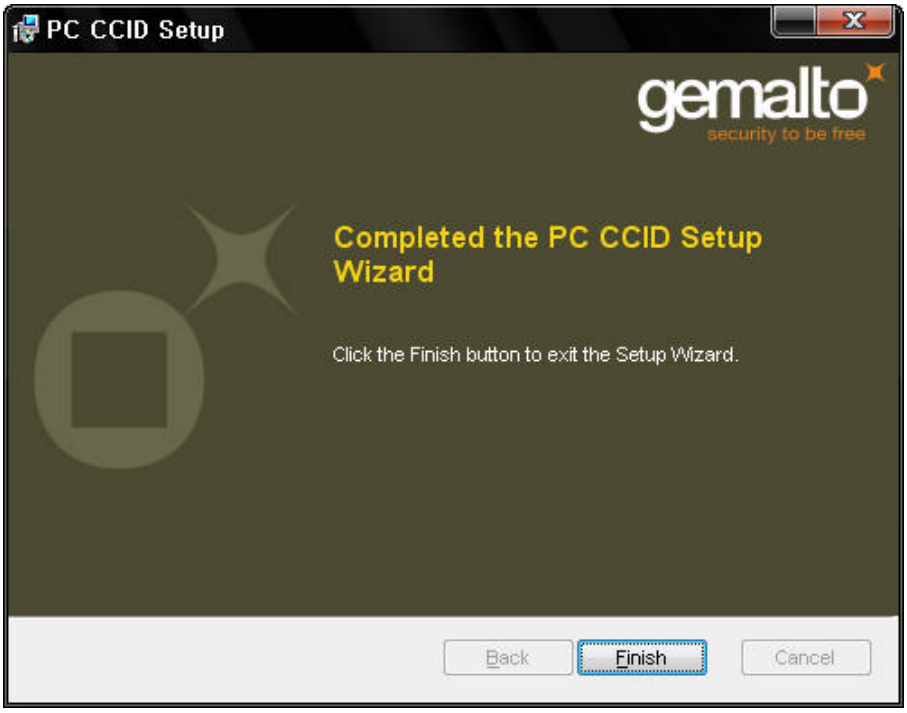
The installation message is shown as the Pic.127. Click "Install" to install driver.



Pic.130 Installing the contact smartcard reader driver

5.1.4. Complete installation

When the installation is completed, the window as the Pic.128 is shown. Click the “Finish” to complete the installation steps.



Pic.131 Completing the smartcard reader driver installation

5.2. Contactless smartcard reader

In SMART-50 printer, you can install the two types of smartcard reader which are internal contactless smartcard reader and external contactless smartcard reader. If you have one or more contactless smartcard reader devices on your printer, you should install the contactless smartcard device driver as in the following, and connect SMART-50 printer to your PC.

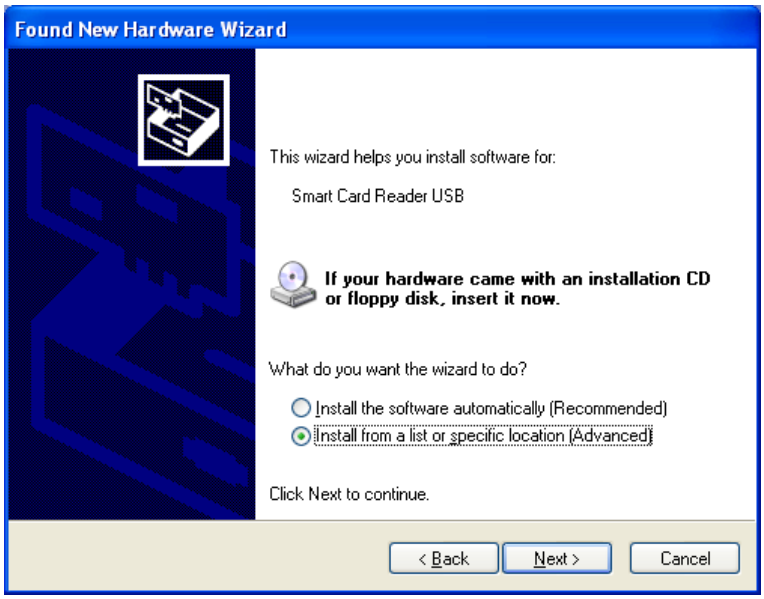
5.2.1. Connect SMART-50 printer to PC

When you connect the printer to PC and turn on the printer, you can see the “Found New Hardware Wizard” as the Pic.129, then Check “No, not that time” and Click “Next” to continue.

Pic.132 Found New Hardware Wizard

5.2.2. Choose the installation method

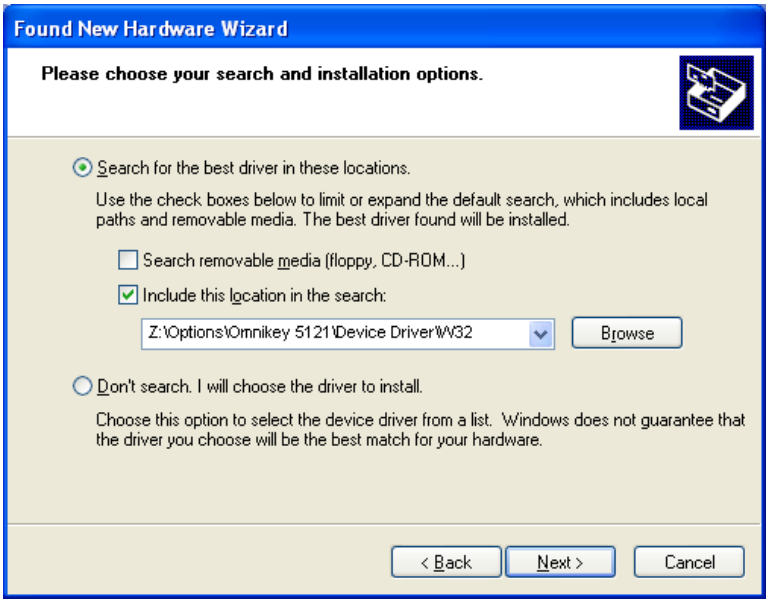
At the window as the Pic.130, select “Install from a list or specific location” and click “Next”.



Pic.133 Installation method selection

5.2.3. Driver location

Insert the smartcard installation CD and find “\Options\ Omnikey 5121” directory on your CD. Find the right directory which is installed OS version on your PC, and select the directory as the Pic.131, and click “Next”.



Pic.134 Driver location

5.2.4. Complete installation

When the installation is completed, the window as the Pic121 is shown, click “Finish” to complete the installation steps.

Pic.135 Completing the driver installation

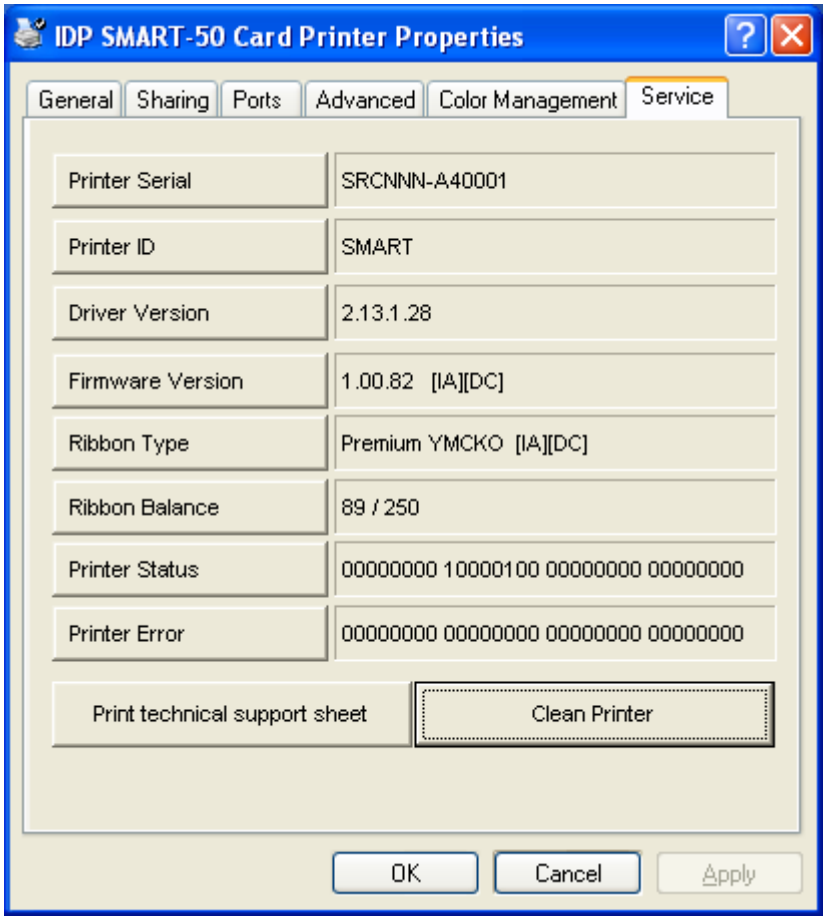
6. Troubleshooting

6.1. Cleaning the printer

To maintain the best condition of SMART-50 printer, you must clean the printer periodically. If you use the exclusive cleaning card as the Pic.133, you can clean the printer easily. For purchase the exclusive cleaning card, ask to SMART-50 printer provider.

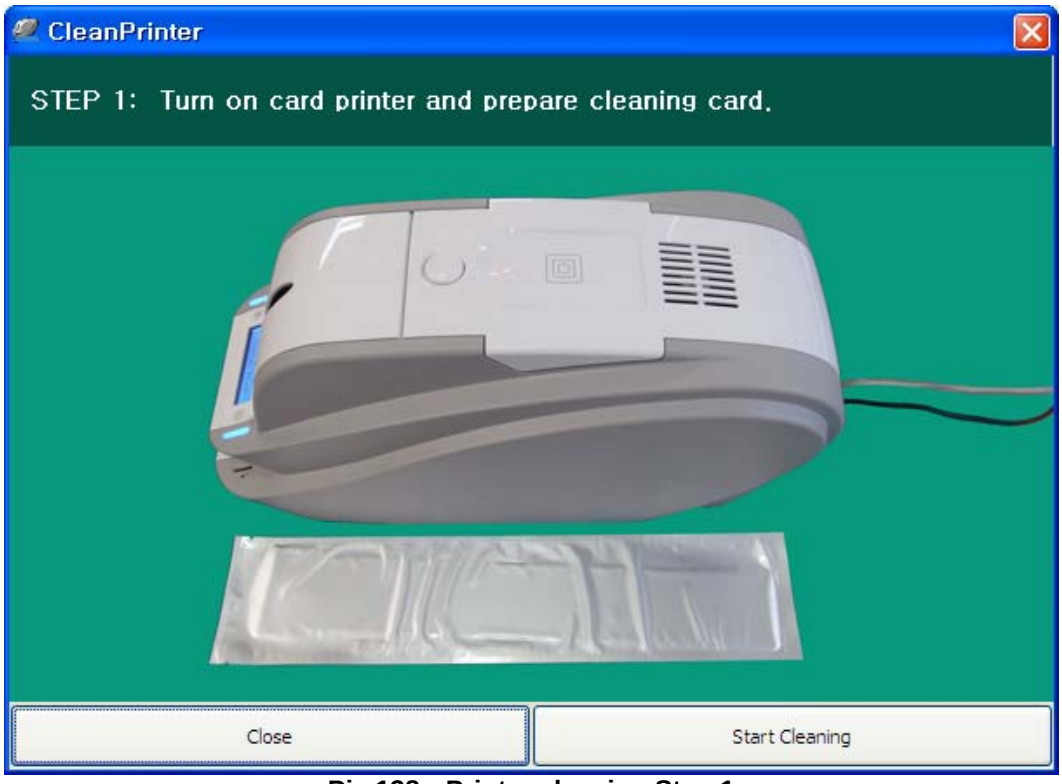
Pic.136 Exclusive cleaning card for SMART-50 printer

If the exclusive cleaning card is ready, click the “Clean Printer” in the service tab of SMART-50 printer driver as the Pic.134. After click, Clean Printer program to clean the printer is run.



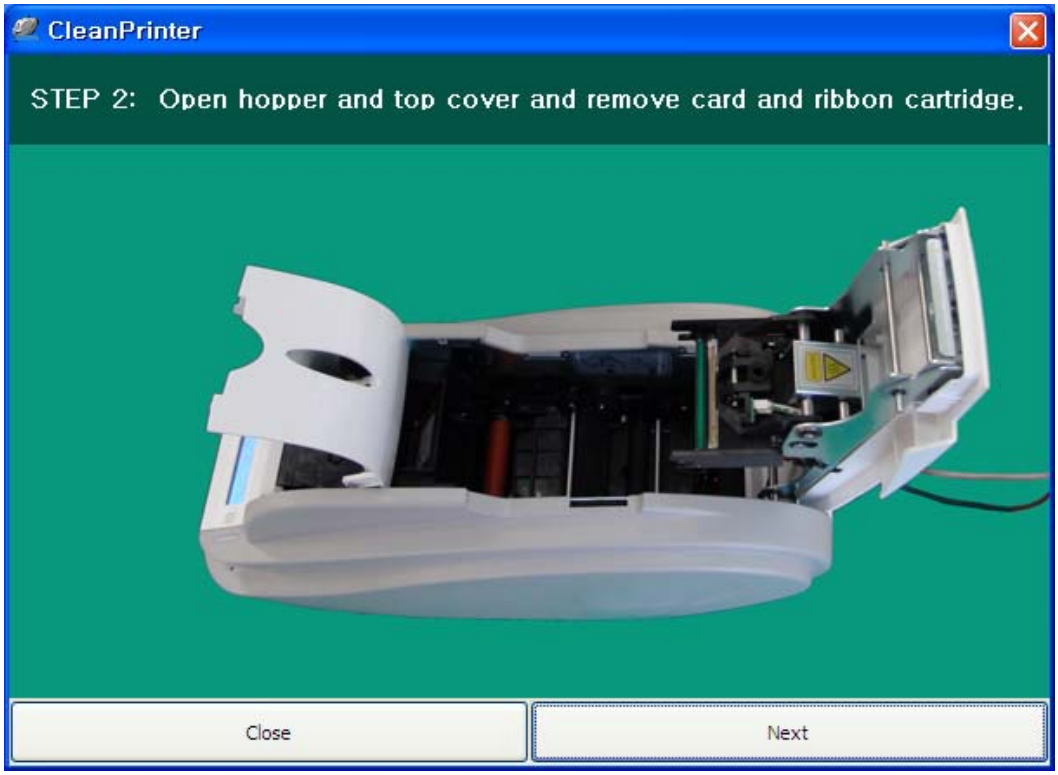
Pic.137 Printer cleaning start

Step 1. Connect the SMART-50 printer to PC and turn it on, and prepare the exclusive cleaning card.



Pic.138 Printer cleaning Step 1

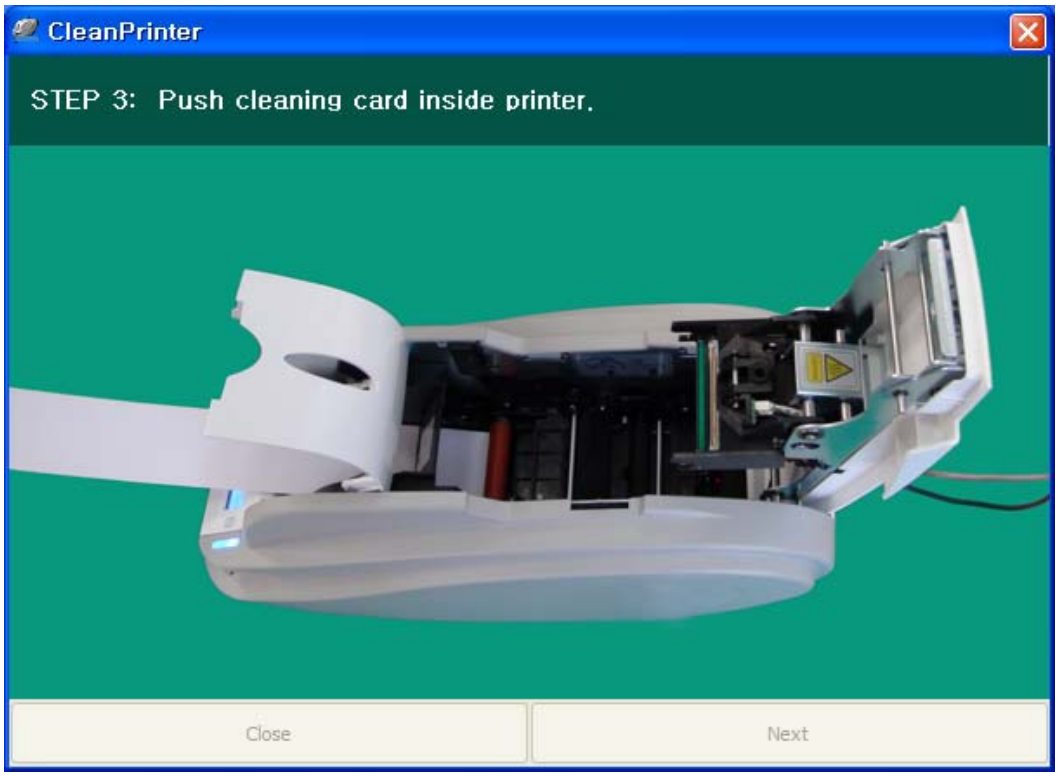
Step 2. Open the hopper and top cover and remove the card and ribbon cartridge.



Pic.139 Printer cleaning Step 2

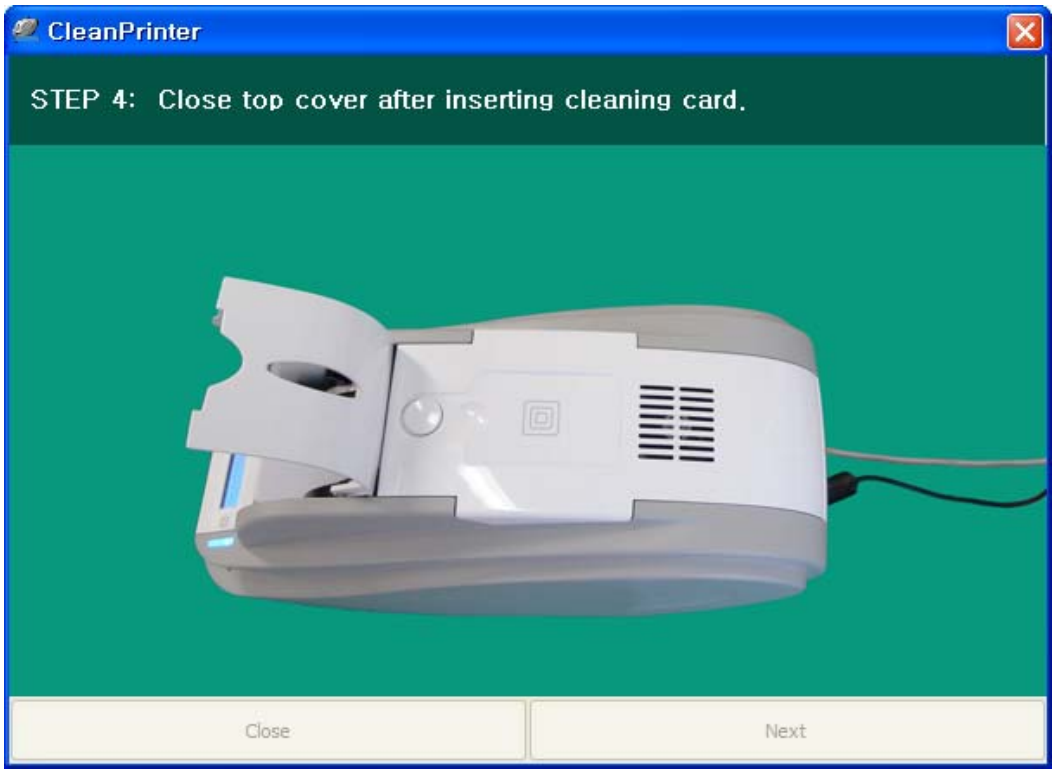
Step 3. Insert the exclusive cleaning card into the printer through input hopper as the Pic.137. When

the exclusive cleaning card is inserted to the cleaning roller, it will be move automatically. It is normal that the exclusive cleaning card is inserted to the ends and rollers are moving to clean.



Pic.140 Printer cleaning Step 3

Step 4. Close the top cover to clean the Thermal Print Head and the printing roller. When the top cover is closed, cleaning card will be moving back and forth to clean.



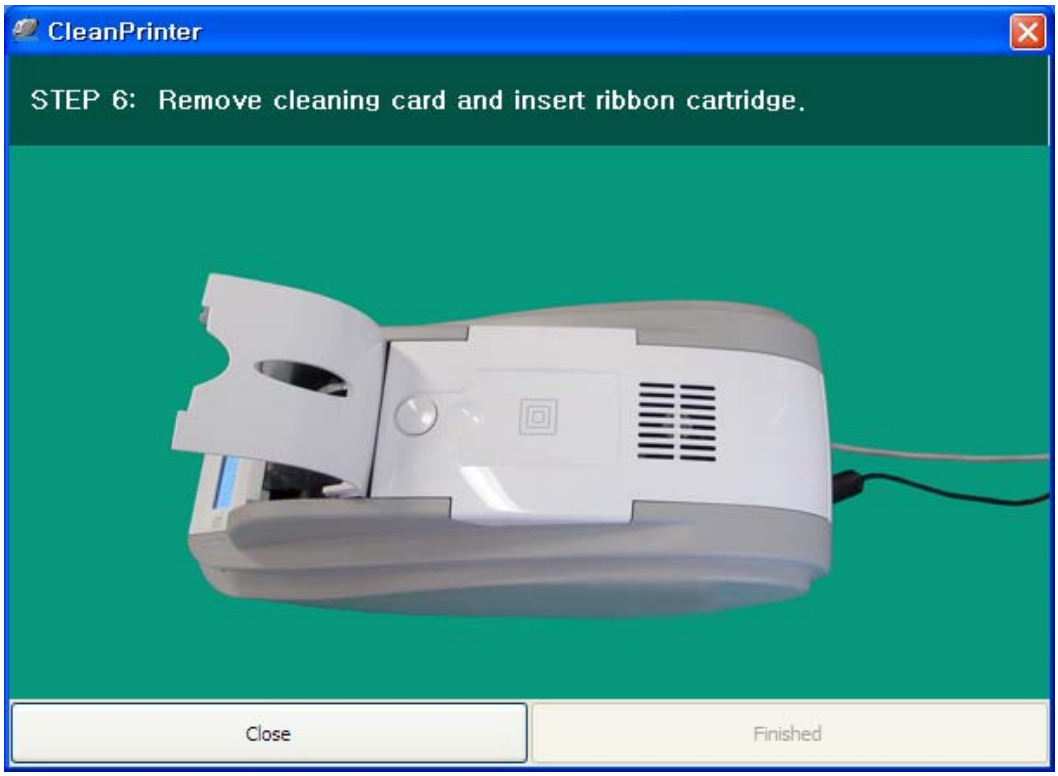
Pic.141 Printer cleaning Step 4

Step 5. Wait until the cleaning is completed. When the cleaning is completed, the exclusive cleaning

card will be ejected automatically as the Pic.139.

Pic.142 Printer cleaning Step 5

Step 6. Remove the exclusive cleaning card and install ribbon cartridge into the printer.

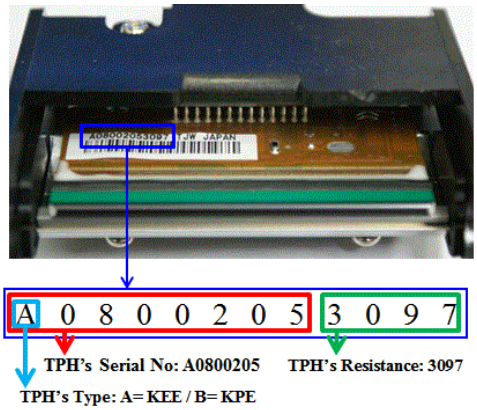


Pic.143 Printer cleaning Step 6

6.2 TPH (Thermal Print Head) replacement

1. **Check the serial number and the resistance of new Thermal Print Head as the Pic. 141**

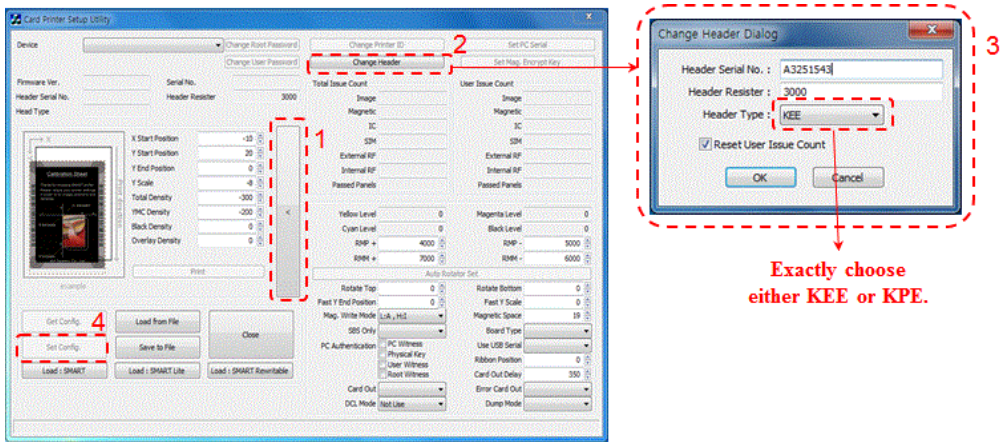
   TPH type: A = KEE, B = KPE
   Serial No.: see the red box.
   TPH resistance: see the green box.



Pic.144 Thermal Print Head

2. **Set up the new TPH's configuration using CardPrinterSetup program.**

   Step1: Run 'Card Printer Setup' in Utilities of the installation CD and click expansion button.
   Step2: Click "Change Header" in the extended setup.
   Step3: Input the TPH's Serial No., Resistance and Type (choose KEE or KPE) on the TPH's label, and click "OK".
   Step4: Click "Set Config" to set the new TPH's configuration.

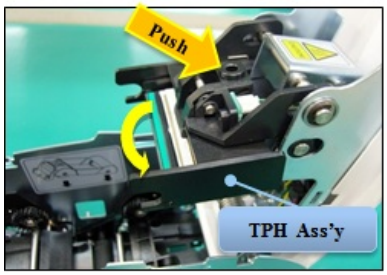


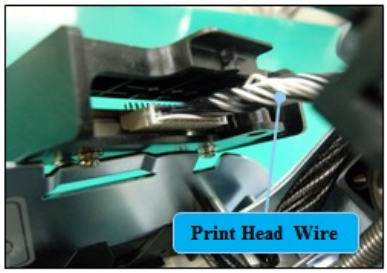
Pic.145 Print head setup

3. **Replacing the new TPH**

   Step1: Remove the old TPH from the top cover.
   (1) Turn off the printer and open the top cover.
   (2) Hold the TPH and press the locked hook, then the TPH is disconnected as the Pic. 143.
   (3) Disconnect the TPH from print head wire carefully.
   (Caution: TPH is possible to HOT.)

   Step2: Installing the new TPH
   (1) Connect new TPH to the print head wire.
   (2). Put the new TPH on the Shift and pull it up until be locked as the Pic. 143.





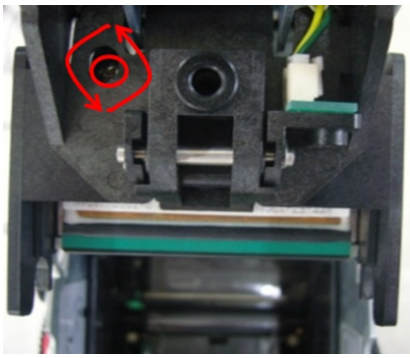
Pic.146 Print head replacement

4. Setup the print position and the color density.

After installing the new TPH, you must reset the print position and the color density using CardPrinterSetup utility. Refer to "4.1.2 Default setting"

5. Calibration of Print Head Angle

To get the best print quality, the TPH should be located vertically with card surface.
If print quality has the problem, it could be caused by print head angle.
Through Adjusting print head angle by screw (red mark in the Pic.144), you could make good quality of print.
(Use the appropriate screw driver to adjust, and turn the screw by 90 degrees at a time.)



Pic.147 Print head angle

6.3. Card movement

6.3.1. Cards can't enter into the printer from input hopper.

- **Non-standard cards or bad cards.**
  Change the cards. You can use only ISO CR-80 card (54mm x 86mm).
- **Card thickness control lever is set improperly.**
  Regulate the card thickness control lever to fit the current card thickness.
- **Bad card array.**
  Array the cards again and put them on input hopper as section 2.2 in this manual.
- **Cards have static and moisture.**
  Remove the moisture or static**.**

6.3.2. Card Transfer Error occurs when the ribbon is coiled around the transfer roller or the printing roller.

Open the top cover and remove the card and the coiled ribbon from SMART-50 printer using front LED buttons. If this problem occurred frequently, check the below things.

- **Non-standard cards or bad cards.**
  Change the cards. You can use only ISO CR-80 card (54mm x 86mm).
- **The transfer roller or the printing roller is contaminated with the dust and dirt**
  Remove the dust and dirt with the cleaning kit as section 6.1
- **Wrong printing position setting.**
  Please contact the local supplier
- **When operating temperature and humidity is out of the acceptable operating limit of the printer.**
  Adjust the operating environment of the printer.

6.3.3. An Error occurs while the card is being transferred.

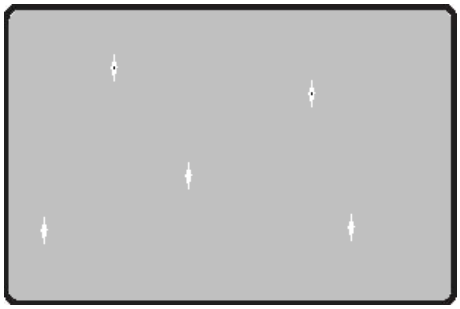
First of all, check the Error message at LCD display.
Open the top cover and remove the card by LED buttons.
If this problem occurs frequently, check the followings.

- **Non-standard cards or bad cards.**
  Change the cards. You can use only ISO CR-80 card (54mm x 86mm).
- **Printer setting is changed or is not proper.**
  Please contact the local supplier.
- **The transfer roller or the printing roller is contaminated with the dust and dirt.**
  Remove the dust and dirt with the cleaning kit as section 6.1.
- **The card surface is contaminated with the dust and dirt.**
  Check the card surface and remove the dust and dirt and try again. If this problem occurs again, retry with new card.

6.4. Printing quality

6.4.1. Not printed or wrong colors printed spot.

- **The card surface is contaminated with the dust and dirt.**
  After checking the card, change it to another card**.**
- **The cleaning roller is contaminated with the dust and dirt.**
  Check the cleaning roller. If there is much dust, change the cleaning roller to the new one.
- **Much dust in the printer.**
  Clean the inside of the printer with the cleaning kit.



Pic.148 Printing quality trouble 1

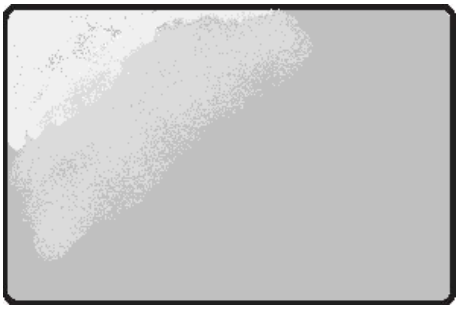
6.4.2. Not printed horizontal line.

- **The ribbon cartridge is installed improperly.**
  Check the ribbon cartridge installation state and whether the ribbon has wrinkles.
- **The printer head is contaminated with the dust and dirt.**
  Clean the printer head with cleaning kit.
- **The printer head is damaged.**
  Please contact the local supplier to replace the printer head.

Pic.149 Printing quality trouble 2

6.4.3. Unclear or not uniform print.

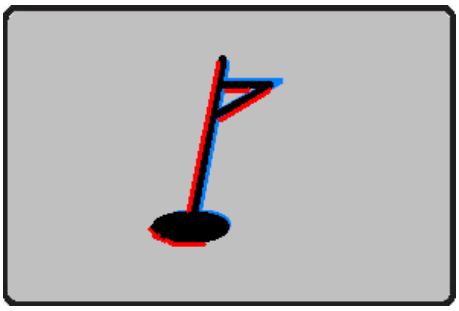
- **Uneven or bad card surface.**
  Change the card.
- **Too high or low setting of the color density.**
  Please contact the local supplier. The color density default of your printer needs to be changed.
- **The printer head is contaminated with the dust and dirt.**
  Clean the printer head with cleaning kit.



Pic.150 Printing quality trouble 3

6.4.4. Not aligned color print.

- **Non-standard cards or bad cards.**
  Change the cards. You can use only ISO CR-80 card (54mm x 86mm).
- **Uneven or bad card surface.**
  Change the card.
- **The transfer roller or printing roller is contaminated with the dust and dirt.**
  Clean the rollers with the cleaning kit as section 6.1.
- **Worn-out printer.**
  Please contact the local supplier.



Pic.151 Printing quality trouble 4

6.4.5. Unplanned color print.

- **Non-standard cards or bad cards.**
  Change the cards. You can use only ISO CR-80 card (54mm x 86mm).
- **Uneven or bad card surface.**
  Change the card.
- **The transfer roller or printing roller is contaminated with the dust and dirt.**
  Clean the rollers with the cleaning kit as section 6.1.
- **Worn-out printer.**
  Please contact the local supplier.

Pic.152 Printing quality trouble 5

6.5. Magnetic stripe encoding

6.5.1. Magnetic encoding error.

First of all, Please press left LED button to retry.

- **The magnetic head is contaminated with the dust and dirt.**
  Clean the magnetic head with the cleaning kit.
- **The magnetic encoding data is not transmitted or the wrong data is transmitted.**
  Check the setting of the program and the driver and the magnetic encoding data you transmitted.
- **The card is not magnetic card, or inserting direction is wrong.**
  Change the card or the direction.
- **Bad magnetic stripes on the card.**
  Change the card.

6.6. General operation

6.6.1. Ribbon snapped during printing.

Open the top cover and take out the cartridge. After putting the snapped pieces on together, install the cartridge again. Check the followings if this kind of problem occur frequently**.**

- **Non-standard cards or bad cards.**
  Change the cards. You can use only ISO CR-80 card (54mm x 86mm).
- **Too high or low setting of the color density.**
  Please contact the local supplier. The color density default of your printer needs to be changed.

6.6.2. LCD display “Ribbon Not Found”

Press the left LED button to retry. If it occurs frequently, check the followings.

- **Not genuine ribbon.**
  Change to the genuine ribbon.
- **Ribbon is consumed.**
  Printing is not possible if ribbon is used up. Change the ribbon.
- **Snapped ribbon.**
  Open the top cover and take out the cartridge. After putting the snapped pieces on together, install the cartridge again.

6.6.3. Printer doesn’t operate even if the printing data has been transmitted. Check the following.

- **Printer power off.**
  Check the power. Turn on the printer power.
  Check the printer adaptor whether it is connected with a socket and the printer.
- **Bad power adaptor.**
  Please contact the local supplier for replacement of the adaptor.
- **The printer driver is “Offline”.**
  Change the printer driver to “Online”.
- **The printer’s USB cable is disconnected or the connection is bad.**
  Check the cable’s connection between PC and the printer.
  If not good, make the USB cable connection again.
- **Bad USB cable.**
  Change the USB cable.
- **The printing is operated with another printer driver.**
  Select the correct SMART-50 printer driver again.
- **Wrong USB port setting of the printer driver.**
  Check the port setting of the printer driver and change the port setting.
- **No ribbon in the printer or error occurred.**
  Install ribbon in the printer or resolve the error.
- **Too long power or USB cable (more than 1.5M).**
  Use the cable provided with the printer.
- **PC’s USB port is down:**
  Reboot your PC.

7. Printer specification

Product Specification	SMART-30S	SMART-30R
Printing		
Print Type	Dye-Sublimation / Resin Thermal Transfers	Direct Thermal Printing & Erasing
Print Area	Edge to Edge	
Resolution	300 dpi	
Dual Side Printing	Option	-
Cards		
Card Feeding	Automatic	
Card Size	ISO CR-80 (54mm x 86mm / 2.12" x 3.38")	
Card Thickness	0.38mm (15mil) ~ 0.76mm (30mil)	
Card Type	PVC, Composit PVC, PET	Rewritable Thermochromic Material
Print Speed(Max.)		
Monochrome	6 sec. (600 cards/hour)	20 sec (180 cards/hour) for Erase & Write
YMCKO	28 sec. (128 cards/hour)	-
YMCKOK	-	-
Capacity		
Input Hopper	80 cards	
Output Hopper	25 cards	
Monochrome Ribbon	1200 cards/roll	–
Color Ribbon	YMCKO 250 cards/roll	–
System		
Memory	64MB	
Control Panel	1 LED Buttons	1 LED Buttons
Supported Platform	Microsoft Windows 2003, XP, Vista(32/64bit), 7(32/64bit), 8(23/64bit)	
Communications	USB, Ethernet(Option)	
Power Supply	Free Voltage (AC 100/220V, 50~60Hz)	
Power Consumption	45W	
Temperature/Humidity	15~35℃ / 20~80%	
Dimensions		
Size(W x L x H)	172mm x 377mm x 190mm	172mm x 377mm x 190mm
Weight	3.4Kg / 7.5lbs	3.1Kg / 6.8lbs
Encoding		
Magnetic Stripe	ISO7811 (Track Ⅰ, Ⅱ, Ⅲ Read / Write), JIS Ⅱ, HiCo / LoCo	
Contact Smart Card	ISO7816 (ID-1), SIM Type - ISO7816 (ID-000)	
Contactless Smart Card	MiFare, DesFire, ISO 14443(type A/B), ISO 15693, iClass	
Certifications		
Certifications	CE, FCC, KC	

Pic.153 Printer Specification 1

Product Specification	SMART-30D
Printing	
Print Type	Dye-Sublimation / Resin Thermal Transfers
Print Area	Edge to Edge
Resolution	300 dpi
Dual Side Printing	Yes
Cards	
Card Feeding	Automatic
Card Size	ISO CR-80 (54mm x 86mm / 2.12" x 3.38")
Card Thickness	0.38mm (15mil) ~ 0.76mm (30mil)
Card Type	PVC, Composit PVC, PET
Print Speed(Max.)	
Monochrome	5 sec. (720 cards/hour)
YMCKO	28 sec. (128 cards/hour)
YMCKOK	32 sec. (112 cards/hour)
Capacity	
Input Hopper	100 cards
Output Hopper	25 cards
Monochrome Ribbon	1200 cards/roll
Color Ribbon	YMCKO 250 cards/roll
System	
Memory	64MB
Control Panel	1 LED Buttons
Supported Platform	Microsoft Windows 2000/2003/XP/Vista/7/8, Mac OS, Linux
Communications	USB, Ethernet(Option)
Power Supply	Free Voltage (AC 100/240V, 50~60Hz)
Power Consumption	48W
Temperature/Humidity	15~35℃ / 20~80%
Dimensions	
Size(W x L x H)	172mm x 472mm x 190mm
Weight	4.2Kg / 9.2lbs
Encoding	
Magnetic Stripe	ISO7811 (Track Ⅰ,Ⅱ,Ⅲ Read / Write), JISⅡ, HiCo / LoCo
Contact Smart Card	ISO7816 (ID-1), SIM Type - ISO7816 (ID-000)
Contactless Smart Card	MiFare, DesFire, ISO 14443(type A/B), ISO 15693, iClass
Certifications	
Certifications	CE, FCC, KC

Pic.154 Printer Specification 2

Product Specification	SMART-50S	SMART-50D
Printing		
Print Type	Dye-Sublimation / Resin Thermal Transfers	
Print Area	Edge to Edge	
Resolution	300 dpi	
Dual Side Printing	Option	Yes
Cards		
Card Feeding	Automatic	
Card Size	ISO CR-80 (54mm x 86mm / 2.12" x 3.38")	
Card Thickness	0.38mm (15mil) ~ 1.0mm (40mil)	
Card Type	PVC, Composit PVC, PET	
Print Speed(Max.)		
Monochrome	5 sec. (720 cards/hour)	
YMCKO	22 sec. (164 cards/hour)	
YMCKOK	-	27 sec. (130 cards/hour)
Capacity		
Input Hopper	100 cards	
Output Hopper	40 cards	
Monochrome Ribbon	1200 cards/roll	
Color Ribbon	YMCKO 250 cards/roll, YMCKOK 200 cards/roll	
System		
Memory	64MB	
Control Panel	LCD Display / 2 LED Buttons	
Supported Platform	Microsoft Windows 2003, XP, Vista(32/64bit), 7(32/64bit)	
Communications	USB, Ethernet(Option)	
Power Supply	Free Voltage (AC 100/220V, 50~60Hz)	
Power Consumption	45W	
Temperature/Humidity	15~35℃ / 20~80%	
Dimensions		
Size(W x L x H)	170mm x 420mm x 195mm	170mm x 510mm x 195mm
Weight	4.5Kg / 10lbs	5.5Kg / 10lbs
Encoding		
Magnetic Stripe	ISO7811 (Track Ⅰ,Ⅱ,Ⅲ Read / Write), JISⅡ, HiCo / LoCo	
Contact Smart Card	ISO7816 (ID-1), SIM Type - ISO7816 (ID-000)	
Contactless Smart Card	MiFare, DesFire, ISO 14443(type A/B), ISO 15693, iClass	
Certifications		
Certifications	CE, UL, FCC, KC	

Pic.155 Printer Specification 3

Product Specification	SMART-50L
Printing	
Print Type	Dye-Sublimation
Print Area	Edge to Edge
Resolution	300 dpi
Dual Side Printing	Yes
Laminating	
Laminating Mode	Single & Double with flip-over
Laminates	0.6mil, 1.0mil, Clear and Holographic
Cards	
Card Feeding	Automatic
Card Size	ISO CR-80 (54mm x 86mm / 2.12" x 3.38")
Card Thickness	0.76mm (29.9mil) ~ 1.0mm (40mil)
Card Type	PVC, Composit PVC, PET-G
Speed(Max.)	
Simultaneous Mode (Front in/Back out)	
YMCK & Single side Laminate	23 sec. (156 cards/hour)
YMCFK & Single side Laminate	31 sec. (116 cards/hour)
YMCKK & Single side Laminate	33 sec. (109 cards/hour)
One-by-One Mode (Front in/Front out)	
YMCK & Single side Laminate	44 sec. (82 cards/hour)
YMCFK & Single side Laminate	52 sec. (69 cards/hour)
YMCKK & Single side Laminate	54 sec. (67 cards/hour)
Capacity	
Simultaneous Mode (Front in/Back out)	
Input Hopper	100 cards
Output Hopper	25 cards
One-by-One Mode (Front in/Front out)	
Input Hopper	100 cards
Output Hopper	40 cards
System	
Memory	64MB
Display & Control Panel	LCD Display / 2 LED Buttons
Supported Platform	Microsoft Windows 2003, XP, Vista(32/64bit), 7(32/64bit)
Communications	USB, Ethernet(Option)
Power Supply	Free Voltage (AC 100/240V, 50~60Hz)
Temperature / Humidity	15~35℃ / 20~80%
Dimensions	
Size(W x L x H)	170mm x 900mm x 195mm
Weight	9.2Kg / 20lbs
Encoding	
Magnetic Stripe	ISO7811 (Track Ⅰ, Ⅱ, Ⅲ Read / Write), JIS Ⅱ, HiCo / LoCo
Contact Smart Card	ISO7816 (ID-1)
Contactless Smart Card	MiFare, DesFire, ISO 14443(type A/B), ISO 15693, iClass

Pic.156 Printer Specification 4

FCC Information

This device complies with part 15 of the FCC Results. Operation is subject to the following two conditions :

(1) This Device may not cause harmful interface, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

1.1. Reorient or relocate the receiving antenna.
1.2. Increase the separation between the equipment and receiver.
1.3. Connect the equipment into an outlet on a circuit different from that to which receiver is connected.
1.4. Consult the dealer or experienced radio/TV technician for help.

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

"CAUTION : Exposure to Radio Frequency Radiation.
Antenna shall be mounted in such a manner to minimize the potential for human contact during normal operation. The antenna should not be contacted during operation to avoid the possibility of exceeding the FCC radio frequency exposure limit.