

## SMART-51S, SMART-51D, SMART-51L

# **User Manual**





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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**

For the user's convenience, SMART-51 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
- LCD show the process status

Figure 1 SMART-51 front features



Figure 2 SMART-51 rear features

- ⑦ Backside card outlet
- (8) Stacker fixing Hole
- **9** Power switch
- 10 24V power connector
- 1 Network port

In case there is no network option, it is closed.

12 USB port

There are three models in SMART-51 card printer series such as SMART-51S, SMART-51D, SMART-51L.

**SMART-51S (Figure.3)** is the standard card printer. It can be printed in single side with the encoding. This manual is prepared based on SMART-51S.

**SMART-51D (Figure.4)** has a flipper which can enable to print in both sides. SMART-51D can print the both side of the card with the encoding.

**SMART-51L (Figure.5)** 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-51L's DLW(Direct to Laminating in a Wink) technology provides the most stable & fast laminating solutions.



## **1.2 Printer inside features**

In SMART 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-51 printer.



Figure 6 SMART-51 Inside features

### **①** Output hopper(Stacker)

Collect the printed card and/or encoded cards. Maximum 40 cards are loaded and the extra printed/encoded card is passed out. It can be withdrawed when pulling forward.

### ② Input hopper

Load the cards for printing. Maximum 100 cards are loaded when cover is closed; Maximum 200 cards are loaded when the cover is opened.

## **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.)

## 1.3 Ribbon cartridge features

SMART-51 printer uses the same ribbon cartridge as a SMART-50's. (However, the ribbon for SMART-51 is incompatible with SMART-50's. The color of gear part of the ribbon for SMART-51 is gray.)

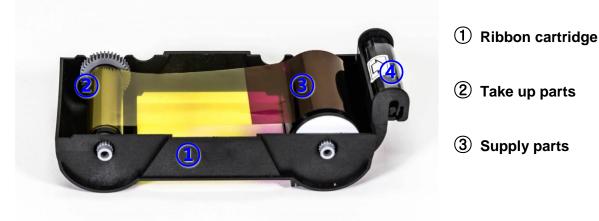


Figure 7 Ribbon cartridge features

## 1 Ribbon cartridge

- -. Install a ribbon and a disposable cleaning roller provided with the ribbon.
- -. 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 Picture. It should be installed as the Figure.7

### **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.

## **1.4 Display and Buttons**

Control panel of Printer consists of 2 lines LCD and 2 buttons. The 2 buttons have the functions as shown in the Figure 8.



## Two Line LCD

Figure 8 SMART-51 Display and Buttons

The status of SMART-51 is 'Initializing' when boot up. It is changed to 'System Ready' if the printer is fine. It is change to 'Printing' when the printer is working. In case of sensing an error, it is changed to 'Error' status. Whenever the top cover is opened, the operation is stopped and the status is 'Top Cover Open'.

The functions of the button under each status are as below table.

Status	Left Button	Right Button	
Initializing	N/A	N/A	
	Ribbon Type/Balance	Sleep	
	Laminating Film Type/ Balance	Initializing	
	User Printed Counts		
System Ready	Network IP Address		
System Ready	Subnet		
	Gateway		
	Network MAC Address		
	Pulling out the card		
Printing	N/A	N/A	
Error	Retry	Cancel	
Top Cover Open	Move to backward a card	Move to forward a card	
	Cleaning Mode (when both buttons are pushed)		

# 2. Printer installation

## **2.1.** Connecting a power and a USB cable

## (1) SMART-51S

Connect the power and USB cable as the below picture. Please refer to the 'Network Configuration' if you use the LAN connection.



Figure 9 SMART-51S Connection of power and USB cable

## (2) SMART-51D

Connect the power and USB cable after turning the printer on its side as the below picture. Please refer to the 'Network Configuration' if you use the LAN connection.



Figure 10 SMART-51D Connection of power and USB cable

## (3) SMART-51L

SMART-51L needs two power cables. Connect powers and USB cable after turning the printer on its side as the below picture. Please refer to the 'Network Configuration' if you use the LAN connection.

SMART-51L has two power switches so please turn on both switches.



Figure 11 SMART-51L Connection of powers and USB cable - 1



Figure 12 SMART-51L Connection of powers and USB cable - 2

## 2.2. 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.

(1) Turn off the printer

(2) Open the printer top cover by pressing the top cover open button.



Figure 13 Top Cover open

(3) Take out the ribbon cartridge.



Figure 14 Take out the ribbon cartridge

(4) Install a ribbon into the ribbon cartridge as the right picture.



Figure 15 Loading the ribbon 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.)



Figure 16 Loading the ribbon 2

(6) Install the disposable cleaning roller to the ribbon cartridge.



Figure 17 Installing the cleaning roller

(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.)



Figure 18 Peeling the protective wrapper

(8) Install the ribbon cartridge into the printer after installing the ribbon with a cleaning roller to the cartridge.



Figure 19 Installing the ribbon cartridge

## (9) Close the top cover

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



Figure 20 Close Top Cover

## 2.3. Fitting a laminating film

In case of installation of the laminator, please fit a laminating film as below.

(1) Open the laminator cover by pressing the laminator cover open button. Take out the film cartridge.

(Caution: Laminator head is possible to be HOT. Do not touch it.)



Figure 21 Take out the film cartridge

(2) Insert the laminating film in the same way of ribbon.

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



Figure 22 Loading the laminating film

(3) Install the film cartridge into the laminator and close the laminator cover.



Figure 23 Installing the film cartridge

## 2.4. Loading the cards

This section shows how to load the plastic cards.

## (1) Open the input hopper cover. 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.)

(2) 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.)



Figure 24 Adjusting the card thickness lever

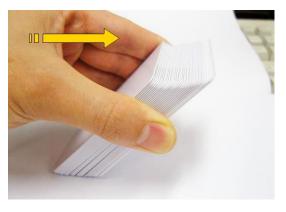


Figure 25 Preparing the card 1

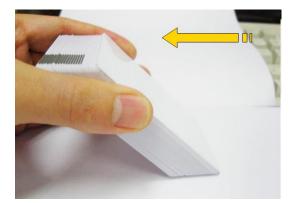


Figure 26 Preparing the card 2

(3) Stand the stack of cards vertically after separating

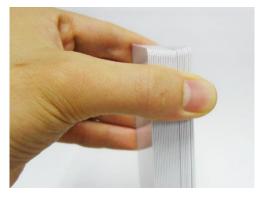


Figure 27 Loading the cards 1

(4) Load the cards on the input hopper properly and close the hopper cover.



Figure 28 Loading the cards 2

(5) When insert each one card, insert the card to the end as left picture



Figure 29 Loading the cards 3



Figure 30 Loading the cards 4

## 2.5. The withdrawal of printed cards.

Printed cards are passed out to the stacker of front bottom side of SMART printer.



Figure 31 SMART-51 Withdrawal a card

SMART-51's stacker can be divided as following image. so you can withdraw the printed cards easily.



Figure 32 SMART-51 Dividing a stacker

## 2.6. Rear Stacker (Option)

SMART-51 can install a rear stacker for option at the back of the printer. In case of SMART-51S and SMART-51L, please install into the slots at the backside. In case of SMART-51D, please open the back cover of the printer and install it.

After that, set the value of 'Card Out' to 'Back' in the CardPrinterConfig Program.



Figure 33 SMART-51S installation of Rear Stacker



Figure 34 SMART-51D installation of Rear Stacker



Figure 35 SMART-51L installation of Rear Stacker

## 2.7. Driver installation (Windows 7 / 8 / 10)

## (1) Please insert the installation CD.

Please choose language and click "Driver Install".

(2) When "User Account Control"

window is opened, click "Yes"



Figure 36 Install Win7 driver 1

# User Account Control × Do you want to allow this app from an unknown publisher to make changes to your device? Publisher. Unknown Publisher: Unknown File origin: Hard drive on this computer Show more details Yes

Figure 37 Install Win7 driver 2

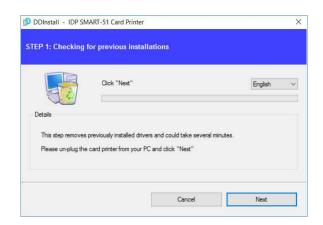
(3) STEP 1:

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 left picture.



### Figure 38 Install Win7 driver 3

## (4) STEP 2:

(5) STEP 3: - USB

Please click "Next" if printer is

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 step (7).

connected to USB only.

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

	Click "Next"	
Details		
The step prepa	ares your system for driver installation.	
Please click "N		

### Figure 39 Install Win7 driver 6

Le	Local USB port	O TCP/IP Network port	t
Details			
1			
	the printer driver.	nt until installation has compl	atad

### Figure 40 Install Win7 driver 8

## (6) Please turn on the printer

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



### Figure 41 Install Win7 driver 9

Lel	Select a TCP/IP Network Prin	ter		×	
S.	Please select a card printer.	[	Refresh		
Details	IDP SMART-51 Card Printer	[SMART09: 192.168.0	0.9]	~	
This step ins	ОК	Cancel			
Please plug					

Figure 42 Install Win7 driver 10

## (7) STEP 3: - Network

Please select the printer that you want to install in the list and click "OK".

(If no printer comes out on the window, please check the connection.)

(8) When driver installation is completed, please click "Close"

STEP 3 : Plug in y	/ART-51 Card Printer			, ,
	Local USB port	C TCP/IP Netwo	rk port	
Details This step installs th Please plug in & tu	ne printer driver. Im on the card printer and wa	ait until installation has o	completed.	
		Cancel	Close	

### Figure 43 Install Win7 driver 11

(9) Please open "Devices and Printers" from "Hardware and Sound". Please check if "IDP SMART-51 Card Printer" is created.

$\rightarrow \uparrow \uparrow$	帶 > Devices and Pri	nters		
Add a device	Add a printer Se	e what's printing	Print server properties	Remove device
Devices (7)				
Printers (5)				
50				
				0
Fax	Microsoft Print to		SINDOH N501	IDP SMART-51
	PDF	Document Write	r PCL	Card Printer

### Figure 44 Install Win7 driver 12

(10) Please click the right mouse button after cursor is placed on "IDP SMART-51 Card Printer" icon. Click "Printer properties".

Devices and Prin	ters					
$\leftarrow \ \rightarrow \ \sim \ \uparrow \ [$	Devices and Print	ers				~
Add a device	Add a printer See	what's printing P	rint server properties	Remove device		
> Devices (7)						
V Printers (5)						
. ~	-	-	-	-		
				0		
Fax	Microsoft Print to PDF	Microsoft XPS Document Writer	SINDOH N501 PCL	IDP SMART-51 Card Printer		
	PDP	Document writer	PCL	Cald Plinter	See what's printing	
					<ul> <li>Set as default printer</li> </ul>	
					Printing preferences Printer properties	
					Create shortcut	_
					Remove device	
					Troubleshoot	
					Properties	-

Figure 45 Install Win7 driver 13

(11) Please select "general" tab and click "Print test page" in "IDP SMART-51 Card Printer Properties" window.

Sugardy Strating	Ports Advanced	Color Managem	ent Security	Service
<b>S</b>	OP SMART-51 Card	Printer		
Location:				
Comment:				
Model: ID	P SMART-51 Card	Printer		
Features				
Color: Yes		Paper availab	ole:	
Double-sided	I: No	CR80 54.0 x	86.0 mm	~
Staple: No				
County Halons	wn			
Speed: Unkno	olution: 300 dpi			*
	Prefe	erences	Print Test	Page

## (12) 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 to "Trouble Shooting".)

## Figure 46 Install Win7 driver 14



Figure 47 Install Win7 driver 15

## 3. Driver configuration

## **3.1. Printer Properties**

To check printer properties, you need to open printer driver. Please open "Devices and Printers" and right-click "IDP SMART-51 Card Printer".

Click "Printer Properties".

## (1) Printing Preferences

Please click "Preferences..." shown on the bottom of the left picture.

🚍 IDP S	MART-51	Card Pr	inter Prope	ties			×
General	Sharing	Ports	Advanced	Color Management	Security	Service	
3		IDP SMA	ART-51 Card	Printer			
<u>L</u> ocatio	on:						
Comm	ient:						
M <u>o</u> del	. 1	DP SMA	RT-51 Card	Printer			
- Featu Cold	ures or: Yes			Paper availabl	e.		
Dou	ble-sided le: No	l: No		CR80 54.0 x 8		ŕ	^
	ed: Unkno imum re		: 300 dpi				~
			Pr	<u>e</u> ferences	Print	<u>T</u> est Page	
				ОК	Cance	4	Apply

### Figure 48 Printer properties

## (2) Layout

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

IDP SMART-51 Card Printer Printing Preferences	$\times$
Layout Input / Output Printing Encoding	
Qrientation: Page Order: Front to Back v	
Ad <u>v</u> anced	
OK Cancel Apply	,

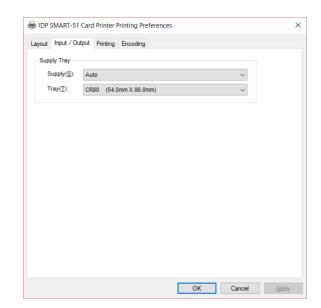
Figure 49 Layout

## (3) Input / Output

## [ Supply Tray ]

**Supply :** You can select "Auto" if SMART-51 has 1 input hopper. Please select the hopper if it has a multi hopper.

**Tray :** You can select "CR-80" because SMART-51 supports CR80 cards only.



### Figure 50 Input / Output

## (4) Printing

**Do Printing** : You can select printing or not

## [ Print Side ]

**Side** : Please select one side printing or both sides printing (It is possible only when you have a flipper.)

## [Front / Back]

Color : You can select color or mono print.

Flip : You can flip an image

**Media / Mask** : You can indicate the area to print by using a predefined mask or user defined mask (white card, smartcard, Magnetic stripe card, etc.) on front or back side.

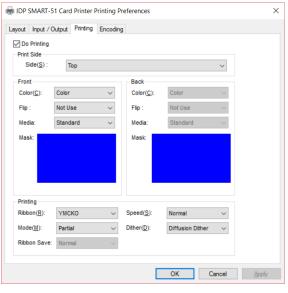
## [Printing]

**Ribbon :** It shows the type of installed ribbon. You don't need to select this option as SMART-51 recognizes ribbon automatically with RF Tag.

Speed : Set printing speed and quality

Mode : Set printing mode

**Standard :** Default print mode. Prints all area of printing



### Figure 51 Printing

You can define a mask.

User defined mask uses BITMAP file (1012 X 636 pixels).

Blue (RGB(0,0,255)): Print and Overlay

Sky Blue (RGB(0,255,255)): Overlay only

Pink (RGB(255,0,255)): Print only

Yellow (RGB(255,255,0)): Florescent

**Partial :** Partial print mode. It is printed partially for the print area only. Printing speed can be faster than standard mode.

**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.)

### **Ribbon Save :**

**K ribbon 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.

## (5) Laminating

This tap will be shown only when SMART-51L printer is connected to PC.

To set Laminator printing options.

**Do Laminating :** You can select laminating or not

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.

I ovout Input / Ou	utput Printing Laminating	
Do Laminating	1	
Laminator Side		
Side :	Тор 🗸	
	Norma	-
Overlay		
Overlay :	Not Use 🗸	1

Figure 52 Laminating

## (6) Encoding

This tap will be shown only when Magnetic encoder is installed.

**Do Encoding :** You can select encoding or not

**Coercivity** : You can select the coercivity to encode

Loco : 300, 600 Oe.

HiCo : 2760 Oe.

**SpCo** : 4000 Oe.

Auto : Defined automatically

**Repeat Count** : You can select the retry count to encoding when encoding is failed

🖶 IDP SMART-51 Card Printer Printing Preferences	×
Layout Input / Output Printing Encoding	
Do Encoding Edit Text String Encoding	
Coercivity LoCo v	
Repeat Count 1 V	
Track1	
Track2 Track3	
21	
OK Cancel A	pply

Figure 53 Encoding

## 3.2. Advanced Options

To change the detailed configuration, In the 'Layout' tab shown, Please click "Advanced..." shown on the bottom of the 'Layout' tab of the 'Preferences'.

- Reset Default Values: Reset to default.
- Color Correction: You can correct gamma for colors. You need to use CardPrinterConfig to adjust color densities.
  - Main [-100:100] : Correct gamma for all panels
  - Yellow [-100:100] : Correct gamma for yellow panel
  - Magenta [-100:100] : Correct gamma for magenta panel
  - Cyan [-100:100] : Correct gamma for cyan panel
  - Black [-100:100] : Correct gamma for black panel
  - **Overlay [-100:100] :** Correct gamma for overlay panel

- **Position Processing:** Set criteria for resin black processing.
  - Color [-32:32]: to set the position of color panels
  - Mono [-32:32]: to set the position of resin or mono panel
  - **Overlay [-32:32]:** to set the position of overlay panel
- Resin Black(K) Processing: Set criteria for resin black processing.
  - Text [0:100]: to set density criteria for extracting black objects
  - **Dot [0:100]:** to set density criteria for extracting black dots
  - Threshold [0:100]: to set density criteria on dithering
  - Dithering Degree [0:100]: to set sharpness on dithering
  - **Resin Extraction:** You can set the method to extract resin black when you use design programs. (If you use the SmartID, you don't need to select this option.) It will be set automatically.
    - Black Object: to extract resin black automatically for text, line, box, circle, binary images, etc.
    - > Black Text: to extract resin black for text only
    - > Black Dots: to extract resin black for all of black
    - Black Dots only: to extract resin black for all of black and not to print on color panels
    - > Not Use: not to extract resin black
- Extra Controls : Other options
  - **Fast Alignment [On/Off]:** to set the position of input card to the magnetic encoder or normal printing. If it is on, the printer can save the time to encode
  - **Rewritable Erase Density [0:100] :** to set Erase Density on Rewritable printer
- Wait Option:
  - Wait at Internal Module Contactless Encoding Position [On/Off]: to set whether to wait at the Internal RF encoder or not

- > Card Side [Front/Back]: to set the direction of card when waiting
- Wait Position [-100:100]: to set the position of card to wait from the criteria position. Unit is 0.1mm
- > Wait Time [0:1000]: to set time to wait. Unit is second
- Wait at External Module Contactless Encoding Position [On/Off]: to set whether to wait at the External RF encoder or not
  - > Card Side [Front/Back]: to set the direction of card when waiting
  - Wait Position [-100:100]: to set the position of card to wait from the criteria position. Unit is 0.1mm
  - > Wait Time [0:1000]: to set time to wait. Unit is second
- Wait at Internal Module Contact Encoding Position [On/Off]: to set whether to wait at the Internal IC encoder or not
  - > Card Side [Front/Back]: to set the direction of card when waiting
  - Wait Position [-100:100]: to set the position of card to wait from the criteria position. Unit is 0.1mm
  - > Wait Time [0:1000]: to set time to wait. Unit is second

# 3.3. Other settings

## (1) Sharing

You can share a printer with Sharing tab via Network.

Default is unchecked "Share this printer".

🖹 IDP S	MART-51	Card Pr	inter Proper	ties			>	×
General	Sharing	Ports	Advanced	Color Manageme	ent Security	Service		
3	printe	r will no	t be availab	ny user on your le when the cor twork and Shar	nputer sleep			
	Share this	printer						
Sha	are name:							
	<u>R</u> ender pr	int jobs	on client co	omputers				
	Windows	, you m not have	ay want to i	sers running dif nstall additional print driver who	drivers, so t	hat the		
					A <u>d</u> ditional D	rivers		
				ОК	Cano	el	Apply	

Figure 54 Printer sharing

### (2) Ports

Port tab shows which port is connected with SMART-51. SMART-51 has connection with USB Virtual printer port as left picture because SMART-51 uses USB connected to PC.

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

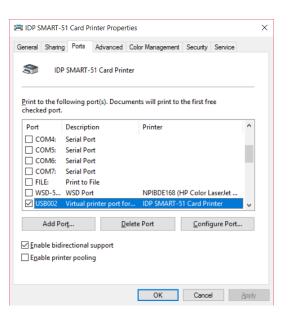


Figure 55 Ports

## (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.)

🖹 IDP SMART-5	51 Card Pr	inter Proper	ties				×
General Sharing	Ports	Advanced	Color Manag	ement	Security	Service	
Always ava		0 74 12:00			0.24.4	2.00	<b>A</b>
⊖ Availa <u>b</u> le fr	rom	오전 12:00	*	То	오전 1	2:00	*
Priorit <u>y</u> :	1	•					
Driver:	IDP SMA	RT-51 Card I	Printer		~ 1	Ne <u>w</u> Drive	r
○ S <u>t</u> art pr	inting <u>i</u> mi	-	is spooled				_
<u>H</u> old mism	atched do	ocuments					
✓ Print spool	ed docum	ents first					
Keep printe	ed docum	ents					
✓ Enable adv	anced pri	nting featur	es				
Printing D	e <u>f</u> aults	Pri <u>n</u>	t Processor		Separa	it <u>o</u> r Page	
			OK		Cance	4	Apply

#### Figure 56 Advanced

### (4) Color Management

In "Color management" tab, you can select color management profile fit to the printer.

SMART-51 uses color profile to express optimal color. The driver selects color profile automatically to fit each ribbon.

(It is recommended to maintain default.)

🚍 IDP S	MART-51	Card Pr	rinter Prope	rties			×
General	Sharing	Ports	Advanced	Color Management	Security	Service	
2	To adju	ist color r	management	settings, click Color M	lanagemen	t.	
		Colo	r <u>M</u> anagemei	nt			
				ОК	Cance	4	Apply

Figure 57 Color Management

## (5) Security

You can set the permission to use a printer. Depend on the permission, the certain group or user can print, manage the printer/documents or not.

🖹 IDP SMART-51 Card Pri	nter Proper	ties			$\times$
General Sharing Ports	Advanced	Color Management	Security	Service	
Group or user names:					
ALL APPLICATION P     CREATOR OWNER     GJOH (GJOH-DESKT     Administrators (GJOH-	OP₩GJOH)	Administrators)			
			A <u>d</u> d	Remove	
Permissions for Everyone			Allov	v Deny	
Print			$\checkmark$		
Manage this printer Manage documents					
Special permissions					
For special permissions or a	dvanced set	tings, click Advance	d.	Ad <u>v</u> anced	
		ОК	Cance	Appl	у

Figure 58 Security

### (6) Service

You can recognize the modules to connect, 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 to "6.2. Cleaning Printer".

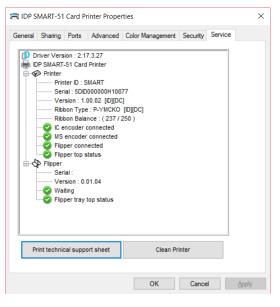


Figure 59 Service

# 4. Utilities

# 4.1. Card Printer Config

SMART-51 is produced with optimized setting. You need to adjust setting value if required or spare parts are replaced using CardPrinterConfig in our Installation CD.

You can adjust following settings with CardPrinterConfig.

## (1) Run CardPrinterConfig

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-51 printer. So 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.)

🍓 Card Pri	inter Config Uti	ility v2.1.1.2 (201	170303)		23
	IDP SMART-51 Ca	ard Printer [SMAR Printer	T1:USB005]	Change Root     Change User	
Card P Firmware Header S	Version	lipper	Serial No. Header Resister		0
Y C	X Antenion Street Teacher of the second se		t Position		>
	Get Config. Set Config.		e to File	Close	

When you are successful to log-in, you can set values shown as left picture.

	51 Card Printe work Printer	r [SMAR	T1:USB005]			Root PW
Card Printer	Flipper					
Firmware Version	0.02.26	Serial No. 45 Header Resister		5DII	5DID000000H1000	
Header Serial No.	B640173530			esister	3045	
$\longrightarrow X$		X Star	t Position	-	4	
		Y Star	t Position		2	
Calibration	(1000)	Y End	Position		0	
Peese, adjust your pr in order to fix image p denation.	inter settings pations and	Y Scal	e		0	
	And post-	Total	Density	-10	0	
V daet yr daet	Print direction	YMC E	Density	-10	0	>
		Black	Density	50	0	
y weighten		Overla	ay Density		0	
		_				,
calibra	ion		Pr	int		J
Get Config		Load	d from File		ose	
Set Config		Sav	/e to File		ose	

Figure 60 CardPrinterConfig Log-in

Figure 61 CardPrinterConfig start

### (2) Card Printer Basic Setup

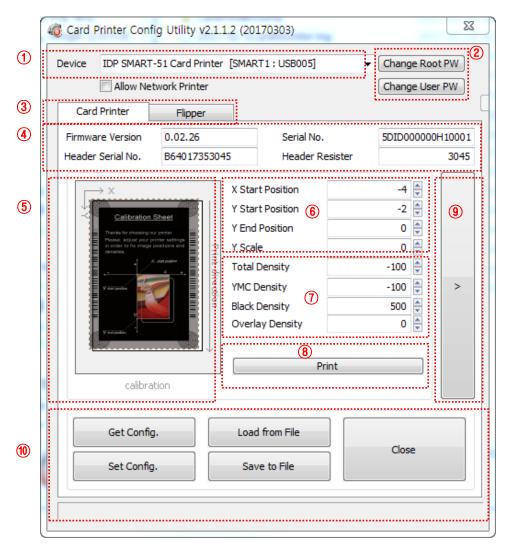


Figure 62 CardPrinterConfig – Card Printer Basic Setup

① To show connected printers

**Device:** You can select a printer using pull-down menu. "IDP SMART-51 Card Printer" is a name of printer. "SMART1" is printer ID, "USB005" is connected port. If you connect the Network printer, please check the "Allow Network Printer" and select in the pull-down menu.

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 CardPrinterConfig 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" tab.(If laminator or flipper is installed, you can setup laminator or flipper setting value by "Laminator" tab or "Flipper" tab..
- ④ To show firmware version, serial number of printer and serial number, resister & 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-51 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-51 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.

Total Density: To set all of the density (Color, Black and Overlay) at one time.

**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.

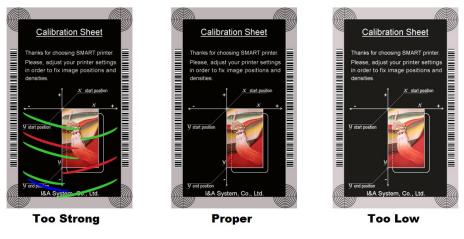


Figure 63 Color density

**Black Density:** To set resin black density. In the picture, 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 to the following pictures.

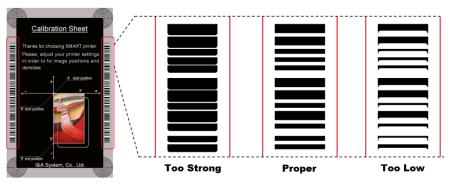


Figure 64 Resin Black density

**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.

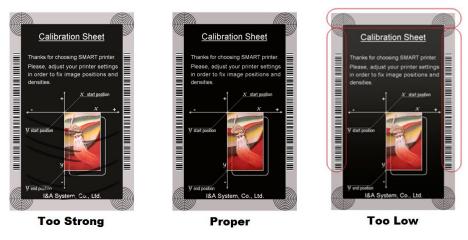


Figure 65 Overlay density

- (8) To print calibration card.
- (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 CardPrinterConfig

### (3) Card Printer Advanced Setup

You can set more values.

/ice IDP SMART	-51 Card Printer	[SMART1: USB005]	<ul> <li>Change Ro</li> </ul>	ot PW	Change Pri	inter ID	Set PC	Serial
Allow Ne	twork Printer		Change Us	er PW	Change	Head	Set Mag. En	icrypt Key
Card Printer	Flipper	٦			Conf	ig		
irmware Version	0.02.26	Serial No.	5DID00000		Total Issue Count		User Issue Count	
eader Serial No.	B64017353045	5 Header Resister		3045	2 Image Magnetic		Image	(
$\longrightarrow X$		X Start Position	-4 🚔		Magnetic Magnetic	4	Magnetic	
		Y Start Position	-2		IC	0	IC	
< Calibration	Sheet	Y End Position	0		External RF	0	External RF	
Thanks for phoosing o	vinter settings				Internal RF	0	Internal RF	
deradice.		Y Scale			Printed Panels	1722	Cleaning Count	
		Total Density	-100 🚔		Cleaning Count	0	Skipped Cleaning	
y dat profiles	<b>S</b>	YMC Density	-100 🌲	<	Skipped Cleaning	0		
		Black Density	500 🚔		ų			
y and partices		Overlay Density	0		(3) RMP +	4000	RMP -	6000
					RMM +		RMM -	6000
		Print			Ribbon Position		Ribbon Search Mode	
calibra	ition				Print Wait Time		Initial Flipper Angle	0
				_	Display Type	**********************	Security	PC Auth.
Get Confid		Load from File			UART Baud Rate			User Auth. Root Auth.
			Close		DCL Mode		SBS Only	
Set Config	a.	Save to File			4 afe Head Heat	Not Use 🔻	Cleaning Warning	<u>}</u>
					Use USB Serial		Mag. Head Position	<u></u>
					Card Out		Error Card Out	<u> </u>
					Auto Front Card In		Auto Rear Card In	
					Dump Mode	<u> </u>	User Mag. Current	200
					Mag. Write Mode		Mag. Start Position	200
					Card In Speed	<u> </u>	Card Move Speed	
					Card Eject Speed		cara nove opeca	210
					Gui a Eject opeeu			

Figure 66 CardPrinterConfig – Card Printer Advanced Setup

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

**Change Printer ID:** When SMART-51 is used by SDK, you can set unique ID for SMART-51 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".

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 Auth.**" of ④ is checked and rebooted. At that time, the specific information of used PC is saved to SMART-51 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-51 using "Set Mag. Encrypt Key".

- ② To show how many cards are issued with SMART-51 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 ribbon motor management. SMART-51 recognizes ribbon color automatically and controls motor by ribbon remaining. "RMP+", "RMP-", "RMM+", "RMM-" are necessary variables to control ribbon motor. Please do not change values for them as it affects card quality.

**RMP+:** Set the ribbon motor's max torque value while printing when the balance is max.

**RMP-**: Set the ribbon motor's min torque value while printing when the balance is min.

**RMM+:** Set the ribbon motor's max torque value while moving when the balance is max.

**RMM-**: Set the ribbon motor's min torque value while moving when the balance is min.

**Ribbon Position:** Set the ribbon arrangement position

Ribbon Search Mode: Set the ribbon Search method

Print Wait Time: Set the time from lifting down the print head to starting print

**Initial Flipper Angle:** Set the angle of flipper when card is out if the 'Card Out' is 'Back'

④ Please refer as below for other values.

**Display Type:** Set a type of LCD display module

**UART Baud Rate:** Set the speed of communication of Internal Serial port. It is used for the KIOSK model.

Security: There are several ways to set a security function for SMART-51.

**PC Auth.:** You can use a printer with specific PC. It is activated when you click "Set PC Serial".

User/Root Auth.: You can set passwords for User and Administrator.

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

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

Safe Head Heat: Set not to print if the print head is overheated.

Cleaning Warning: Set to show the 'Do cleaning' message periodically

**Use USB Serial:** When SMART-51 is connected to USB, it transmits the USB serial number to PC. Default is the same number used by all SMART-51. Please set this option when you use multiple SMART-51 printers connected to 1 PC via USB. It enables unique serial numbers for each USB.

**Mag. Head Position:** SMART-51 can install the magnetic encoder on upper/lower side of a card. You can set it depending on the position of encoder.

Card Out: Set the way to eject cards.

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

Auto Front Card In: Set to input a card automatically if the front card-in sensor detects a card. It is used for the KIOSK model.

Auto Rear Card In: Set to input a card automatically if the rear card-in sensor detects a card. It is used for the KIOSK model.

Dump Mode: It records log data to inspect the operation of printer.

**User Mag. Current:** The default current value when the user selects to use the defined value when magnetic encoding

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 card.

Magnetic Start Position: Set the start position of magnetic stripe when you encode.

Card In Speed: set the speed of inputting a card

Card Move Speed: set the speed of moving a card

Card Eject Speed: set the speed of ejecting a card

### (4) Flipper Setup

This 'Flipper' tab is shown when the flipper option is installed.

	🧔 Card Printer C	Config Utility v2.	.1.1.2 (20:	170303)			×
	Device IDP SM	ART-51 Card Prin	ter [SMAR	T1:USB005]	•	Change Ro	ot PW
	Allow	Network Printer				Change Us	er PW
$\mathbf{C}$	Card Printer	Flipper					
(1)	Flipper Version	0.01.03		Flipper Serial	No.	12345678a	bcdefgh
	- Information						
	Device A	ttribute	0				
			10 🌲	Out Spe	ed	210 🌻	
(2)	Move	e Speed 21	10				
•							>
	Get C	onfig.	Load	from File			
	Set Co	onfig.	Sav	e to File		Close	
		_					

Figure 67 CardPrinterConfig – Flipper Setup

### 1 To show installed flipper

Firmware version and serial number of flipper

## ② To set configuration of flipper

Device Attribute: Basic attribute of flipper

Card In Speed: Set the speed of inputting a card into a flipper

Cade Move Speed: Set the speed of moving a card in the flipper

Card Eject Speed: Set the speed of ejecting a card from the flipper

## (5) Laminator Basic Setup

This 'Laminator' tab is shown when the laminator option is installed.

		51 Card Printer [SM		•	Change Roo	
	Allow Netw	vork Printer			Change User	' PV
	Card Printer	Laminator				
	Laminator Version	0.01.03	Laminator S	erial No.	5LID-H10001	L
			Lami. Head	Resister		
	Information					<u> </u>
	Film Type	CLEAR 1.0MIL	Film Remain		250/250	
	Laminator Code	[SM][00][00]	Film Code	[SI	4][00][00]	(4
i.	Heater Temperature	e 160 🌲	Laminating PPS		525 🌲	
	Laminating Move Pul	lse 8250 🌻	Lami. Start Card P	os.	52 🌲	
	Torque Laminating M	1AX 600 🚔	Torque Laminating	MIN	500 🌲	
	Laminating width Pul	lse 6225 🌲	Film Attribute		1	
	Get Config.		oad from File		Close	
	Set Config.		Save to File		0.000	

Figure 68 CardPrinterConfig – Laminator Basic Setup

- ① It shows the information of installed laminator such as firm-ware version, serial number.
- 2 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.

③ 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 Attribute : It changes film attribution.

④ It shows "Advanced Setup" window.

### (6) Laminator Advanced Setup

IDP SMART-51 Card Printer [SMART : USB005]	<ul> <li>Change Roo</li> </ul>	ot PW	Change Print	er ID	Set PC	C Serial
Card Printer Laminator	Change Use	er PW	Change He Config	ad	Set Mag. E	ncrypt Key
	Serial No. 5LID-H1000	1 398	User Laminating Count	Clear Count	Total Laminating Count	584
Film Type     CLEAR 1.0MIL     Film Remain       Laminator Code     [SM][00][00]     Film Code       Heater Temperature     160     Laminating PPS       Laminating Move Pulse     8250     Laminating Code       Torque Laminating MAX     600     Torque Laminating       Laminating width Pulse     6225     Film Attribute		<	Torque Move Max Head Motor Torque In Speed Move Speed	700 1000 210 210	Torque Move Min Device Attribute Out Speed	500 1 210
Get Config.         Load from File           Set Config.         Save to File	Close					

Figure 69 CardPrinterConfig – Laminator Advanced Setup

- 1 It shows total laminating count.
- 2 You can change other configurations of laminator

Torque Move Max: Change Maximum motor torque
Torque Move Min: Change Minimum motor torque
Head Motor Torque: Change head motor torque
Device Attribute: The attribute value of laminator
In Speed: Set the speed of inputting a card into a laminator
Out Speed: Set the speed of ejecting a card from the laminator
Move Speed: Set the speed of moving a card in the laminator

## 4.2. Network configuration

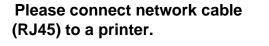
(1) Connecting network port

The printer which installed with network option has a port for network connection as shown in the left picture.

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



Figure 70 Rear view of SMART-51 printer 1



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



Figure 71 Rear view of SMART-51 printer 2

DHCP (Dynamic Host Configuration Protocol) which automatically assigns IP address to the SMART-51 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-51 installation CD to set or change network configuration.

### (2) Network configuration

### NetAdmin is run as the Pic.72 after turning on SMART-51 network printer.

- 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.
- A Network Information
   Shows firmware version of network module

JSB port state	Reboot module	Reset to	default	Upgrade firm	ware
System Management S	ervice Configuration	OCP Confi	guration U	ser Configuratio	n
Network					
DHCP	Mac Address :				
IP:				_	
Network Mask					
Gateway :					
WiFi (Option)					
WiFi ESSID :					
WiFi Key :					
DHCP					
IP:					
Network Mask					
Gateway :					

Figure 72 Running the NetAdmin

### 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.
- If Static IP is used, please check the IP configuration. If another device uses same IP address, it doesn't work.

			Refresh Conner
USB port state	Reboot module	Reset to defaul	t Upgrade firmware
vstem Management	Service Configuration	OCP Configuration	n User Configuration
Network			
O DHCP	Mac Address :		
IP:			
Network Mas	k: .		
Gateway :			
WiFi (Option)			
WiFi ESSID :	, 		
WiFi Key :			
DHCP			
Static			
IP:			
Network Mas	k: .		
Gateway :			
	Get Co	onfiguration	Set Configuration

Figure 73 Network printer is not found

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 left picture..

- 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.

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

Default password is "admin".

USB port state	Reboot module	Reset to defau	lt Upgrade firmwa
System Management	Service Configuration	OCP Configuratio	n User Configuration
Network	Service Corriguiation	OCF Comgarada	in oser comgaration
O DHCP	Mac Address :		
IP : Login			<b>x</b>
Netw			
Gatev	l: admin		
WiFi Pa	assword :		
WiFi ES			
WiFi Ke	OK	Cancel	
IP :			
Network Mask	a .		
Gateway :			
		onfiguration	Set Configuration

Figure 74 Connecting to USB port

DP SMART-50 Card Printer	[SMART228:192.168.0.228]	Refresh Connec
USB port state	Reboot module Reset to default	Upgrade firmware
System Management	Service Configuration OCP Configuration	User Configuration
Network		
ODHCP	de la companya de la	
	1111	
IP	Id : admin	[ ]
Nel	Password :	<u> </u>
Gal	Password :	
	OK Cancel	
	OK Cancel	
	Get Configuration	Set Configuration

Figure 75 NetAdmin Log-in

"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.

	Reboot mo	dula	Bee	et to d	ofoui	<b>I</b>	Upgrade firm
USB port state	Reboot mot		Res	21 10 0	ciau		opgrade firm
ystem Management Ser	vice Config	uration	OCP C	Configu	ratio	n Use	r Configuratio
Network							
C DHCP	Mac Addr	ess :	A0	: F6 : F	Ð:2	22:78	: D3
<ul> <li>Static</li> </ul>							_
IP :	192	. 168		0	1	227	
USB Ports							×
POPT OF SMAPT	E1 Cord Pr	inter					
PORT 0: SMART- PORT 1: PORT 2: PORT 3:	-51 Card Pr	inter					
PORT 1: PORT 2: PORT 3:	-51 Card Pr	inter				_	
PORT 1: PORT 2: PORT 3: UDHCP Static			_	_		_	
PORT 1: PORT 2: PORT 3: VIDHCP Static IP :	192	. 168		1		223	
PORT 1: PORT 2: PORT 3: DHCP Static IP : Network Mask :				1 255		223	
PORT 1: PORT 2: PORT 3: VIDHCP Static IP :	192	. 168 . 255		-			

#### Figure 76 USB port state

# "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".

USB port state	Reboot module	Reset to default	Upgrade firmware
			,
ystem Management	Service Configuration	OCP Configuration	Jser Configuration
admin			
-			
[	ONFIRM	×	
	Do you want to reb	oot printer?	
	It will takes several r	ninutes.	
	0100		
	예(Y)	아니요(N)	
C			

Figure 77 Rebooting the network module

### "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".

USB port state	Reboot module	Reset to defau	It Upgrade firmwa	re
System Management	Service Configuration	OCP Configuration	on User Configuration	1
admin				
0	NFIRM		x	
	Do you want to rese will takes several r		?	
	(୩(୪)	아니요	(N)	
_				

Figure 78 Reset to default

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

• You can choose a firmware file.

<u></u>	NetAdmin	22	]
I	DP SMART-51 Card Printer [SMART1 : 192.168.0.227]	Refresh Disconnect	
🙆 다른 이름으로 저	1 <mark>8</mark>	Capita Incon.	×
저장 위치(I):		G 🤌 📂 🛄 •	
최근 위치	이를 ^ smartnet2-fs-1.7.055.bin	수정한 날짜 2017-02-24 오후 1:	유형 BIN 파일
바탕 화면			
<b>()</b> 라이브러리			
<b>네</b> 컴퓨터			
<a>the</a>			+
네트워크	파일 형식(T): Firmware Files (*,bin)	•	저장(S) 취소
S	MART1 is connected ( OS: smartnet2-os-1.5.307.bin FS: smartn	net2-fs-1.7.055.bin )	

Figure 79 Upgrading the firmware 1

- 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.

USB port state R	eboot mod	lule	Res	et to d	efaul	t [	Upgrad	e firmwa
System Management Serv	rice Config	uration	OCP (	Configu	ratio	n Use	er Config	uration
Network								
O DHCP	Mac Addre	ess :	A0	: F6 : F	D:2	2:78	: D3	
Static							_	
IP:	192	. 16	з.	0		227		
This window	rn off the p w will be cle							
Do not tu U This window Wif								
Do not tur This window Wif Wif UHCP								
Do not tu U This window Wif			er the u		e is o	omplet		
Do not tur Wif Wif Wif DHCP Static	w will be do	osed afte	er the u	upgrade	e is o	omplet		
Do not tur Wif Wif DICP Static IP:	w will be do	osed afte	er the u	upgrad	e is o	223		
Do not tur V This window Wif V DHCP Static IP : Network Mask :	w will be ck	osed afte	er the u	upgrade 1 255	e is o	223 0		

Figure 80 Upgrading the firmware 2

- 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".

USB port state	Reboot module	Reset to de	fault	grade firmware
System Management	Service Configuration	OCP Configur	ation User C	onfiguration
Network				
O DHCP	Mac Address	40 · E6 · E		3
● SI CON	FIRM		×	
IP :				
Netwo	mware upgrade was	succeed		
Gatew				
Thi	is change will be ap	plied after reb	oot.	
WiFi ( Do	you want to reboo	t now?		
WiFi ESS	, ou name to repoo			
WiFi Key				
✓ DHCF	(Y)	OFL	-[요(N)	
Static				
IP:	192 , 10	··· ·	, 223	
Network Mask	: 255 . 25	5 . 255	. 0	
Gateway :	192 . 16	8.1	. 1	

Figure 81 Upgrading the firmware 3

# If you setup network automatically, please choose DHCP.

- Please select DHCP or Static.
- "DHCP" is default for SMART-51 printer.
- Please enter values for "IP", "Network Mask", and "Gateway". Click "Set Configuration".
- 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-51 network printer.
- 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-51 network printer.

#### **Wireless Network Configuration**

- For wireless network, the WIFI option should be installed in the Network Module
- Check "WiFi (Option)" button to activate it
- Enter the ESSID value in "WiFi ESSID" to access
- Enter the Key value in "WiFi Key"
- Set the IP address as the same way of LAN network
- Click "Set Configuration" to save the configuration value and reboot the printer

ation

Figure 82 Dynamic IP configuration

USB port state Re	eboot mo	dule		Res	et to d	efau	t I	Jpgrade firmwa
stem Management Servi	ice Config	urat	ion C	OCP (	Configu	ratio	n User	Configuration
Network								
	Mac Addr	ess	•	A0	: F6 : F	D : 2	2:78:	D3
Static     IP :	192		168		0		227	
Network Mask :	255	÷	255	÷		÷	0	
Gateway :	192	÷	168	÷	0	÷	1	
WiFi (Option)								
WiFi ESSID :								
WiFi Key :								
✓ DHCP								
Static								
IP:	192	÷	168		1		223	
Network Mask :	255		255		255		0	
Gateway :	192	÷	168		1		1	
		_	t Confi				0-1-0	onfiguration

Figure 83 Static IP configuration

# You can change Service Configuration.

- SMART-51 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.

# 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.

USB port state Reboo	ot module	Reset to default	Upgrade firmware
System Management Service C	Configuration	OCP Configuration	User Configuration
Use USB Spool			
Use Network Spool			
TCP Port :	9100		
TCP Timeout (sec) :	600		
Use Network SDK			
TCP Port :	11110		
TCP Timeout (sec) :	600		
Use SSL(Secure Sod	ket Layer)		
Use User Authentica			
Use Automatic Card	Out		
Log Level INFO			•
USB Key Monitor			

Figure 84 Network service configuration

	boot module	Reset to defa	4 June 1 0	
USB port state Re	DOOT MODULE	Reset to defau	ult Upgrade fi	rmware
ystem Management Servic	e Configuration	OCP Configuration	on User Configura	ation
Use OCP(Open Card	Print)			
TCP Port :	23			
TCP Timeout (sec) :	600			
Use Terminal Emu Use SSL(Secure S Use User Authen Use Automatic Ca	ocket Layer) tication			
Use Format (LPD)				
TCP Port :	515			
TCP Timeout (sec) :	600			
OCP Format	Get Conf	iguration	Set Configuration	00

Figure 85 OCP 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

USB port state	Reboot module	Reset to default	Upgrade firmware
System Management	Service Configuration	OCP Configuration	User Configuration
admin			

Figure 86 Network user configuration

## 4.3. 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"

## (1) CardPrinterTest

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

6	Card Printer T	est Program	v2.1.0.4 (20	)170307)											X
1)	nter IDP SMA	ART-51 Card Pr							etwork Printe				or: 00:00:00		
2)		Card 💵								eto			Lock		
3)	End	<u>[out]</u> [	Back	IC2 F	F2 rom Lam	Distance	0 📮	🗸 Flip B	Open	Close	Use Log	Clear Log Do Print	) Print		
يبو		Repeat :	0 /	1	Setting 🔲	Retry 1	Error M		0 IC :		0 Other :	0	Blocking		
	Batch Start	Include Car		1		Prompt on Error		ag. W :	0 RF :		0 00161.				
Q	4)	Card H	olding	1									Clear Status		
		PC/SC) RF (PC									Temperatur		altime Check		
ĥ	READ Read	🛛 🔽 Track 1							*	ō	Th Head:	23°C Rib.	Color: 15		<b>(6)</b>
[	Do Read	Track 2							*	ō	Printer Stat	us 🔽 Re	altime Check	Lami. Status	
	Read All Buffer								-	ō	Ribbon: YMC		54/250	Film: 0x0032	250/250
0	5)								*		laminator o			000000000 ready	
	Bit Mode	JIS							*	0	flipper is	top sided	1	top sided flippe lock sensor head up/down sen	
	WRITE													neau up/uown sei	501
(	Write	🛛 🔽 Track 1							*	0 76					
	Lo-Co 👻 Random Fill	V Track 2							<u>^</u>	0 37					
	Write All Buffer	V Track 3							*	0					
	Do Write	] 🔲 JIS							*	0					
									*	69					
											4			<b></b>	
	$\mathcal{D}$														
<b>.</b>															i

Figure 87 CardPrinterTest

- ① **Select Printer:** select printer to test. In the picture, "IDP SMART-51 Card Printer" is the Printer name, SMART1 is the Printer ID, and USB005 is the connected port.
- ② Control : To execute each step to test
- ③ **Print:** Print test with CSD file which is designed by Smart ID 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.
- Message: Description of status by log.

### (2) Select printer and control

When you execute CardPrinterTest, it will search connected printers by USB and Network automatically and SMART-51 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-51 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-51 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.

### (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) 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.

### (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"  $\rightarrow$  Move "Mag"  $\rightarrow$  Magnetic "Random Fill"  $\rightarrow$  Magnetic "Write"  $\rightarrow$  Magnetic "Read"  $\rightarrow$  Card "OUT".

Magnetic IC (Po	C/SC) RF (PC	I/SC) Misc	
C READ			
Read	🔽 Track 1	< >	O
Do Read	🔽 Track 2		Ō
Read All Buffer	🖌 Track 3		٥
	🔲 JIS		O
Bit Mode			
WRITE			=
Write	🔽 Track 1	< >	0 76
Low-Co 🔽	🔽 Track 2		0
Random Fill	🔽 Track 3		<mark>37</mark> 0
Write All Buffer			104
Do Write	IIS 📃 JIS	×	0 69

Figure 88 Magnetic stripe encoding

### IC(PC/SC) : Contact Smartcard Encoding

In SMART-51 printer, a contact smartcard encoder can be installed and SMART-51 printer supports the contact smartcard encoder in the printer inside. "IC(PC/SC)" is to test a contact smartcard encoding.

"**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"  $\rightarrow$  Move "IC"  $\rightarrow$  IC "ICH Contact"  $\rightarrow$  IC "Init"  $\rightarrow$  IC "Contact"  $\rightarrow$  IC "Reset"  $\rightarrow$  IC "ICH Dis-contact"  $\rightarrow$  Card "OUT".

Magnetic IC (PC/SC) RF (PC/SC) Misc			
Internal IC (Batch)			
ICH Contact ICH Discontact Get ATR Init Read Contact Reset Write Clear	ATR Name Address Phone		0 Bytes 0 Bytes 0 Bytes 0 Bytes 0 Bytes
Load APDU APDU-01		Send APDU	0 Bytes
Save APDU APDU-02		Send APDU	0 Bytes
APDU Clear APDU-03		Send APDU	0 Bytes
APDU-04		Send APDU	0 Bytes
APDU-05		Send APDU	0 Bytes
APDU-06		Send APDU	0 Bytes
APDU-07		Send APDU	0 Bytes
APDU-08		Send APDU	0 Bytes
APDU-09		Send APDU	0 Bytes
APDU-10		Send APDU	0 Bytes

Figure 89 Contact smartcard encoding

### **RF(PC/SC) : Contactless Smartcard Encoding**

In SMART-51 printer, a contactless smartcard encoder can be installed and SMART-51 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"  $\rightarrow$  Move "RF"  $\rightarrow$  RF "Connect"  $\rightarrow$  Get UID $\rightarrow$  RF "Discontact"  $\rightarrow$  Card "OUT"

Magnetic IC (PC/SC) RF (PC/SC)	Misc		
🔽 Internal (Batch)			
Init Contact Reset	ATR		0 Bytes 0 Bytes
	Write Addrags		0 Bytes
Get UID	Clear Phone		0 Bytes
Load APDU APDU-01		Send APDU	0 Bytes
Save APDU APDU-02		Send APDU	0 Bytes
APDU Clear APDU-03		Send APDU	0 Bytes
APDU-04		Send APDU	0 Bytes
APDU-05		Send APDU	0 Bytes
APDU-06		Send APDU	0 Bytes
APDU-07		Send APDU	0 Bytes
APDU-08		Send APDU	0 Bytes
APDU-09		Send APDU	0 Bytes
APDU-10		Send APDU	0 Bytes

Figure 90 Contactless smartcard encoding

### (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.

Please refer to the 'SMART SDK manual' for the status code.

## 4.4. Firmware update

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

### (1) CardPrinterFirmware Menu

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

**Card Printer / Flipper / 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 update manually.

**Update:** Updates automatically. In generally, we recommend updating automatically.

Close: Exit.

**Message :** It displays information of updating.

#### (2) Ready for Firmware Update

- Select the printer to update the firmware on the 'Device' list.
- Select the device to update the firmware among Printer/Flipper/Laminator tab. The Flipper and Laminator tab is shown if that option is installed only.
- Click "Browse" and select the new firmware

S CardPrinter Firmware Downloader v2.1.0.2 (20170217)
Devices : [IDP_SMART-51 Card Printer [SMART : USB805]
Card Printer Laminator
version : 0.02.26
Binary File : Browse
Manual Update Close
Device is Ready.
A Program Start.
<pre>===== CONNECT TO DEVICE : IDP SMART-S1 Card Printer [SMART : USB005] CardPrinter Version : 0.02.26</pre>

Figure 91 run CardPrinterFirmware

CardPri	nter Firmware Down	loader v2.1.0.2 (20170217)			)
Devices	IDP SMART-5:	L Card Printer [SMART : U	ISB005]		-
🐗 열기	Corner				×
찿는 위치(l):	🎉 Down		- G	) 🤌 📂 🛄 🕇	
최근 위치	Smart51Flippe	0_02_26_SPI.bin r_0_01_03.bin nator_0_01_03.bin			
바탕 화면					
라이브러리					
( <b>씨</b> ) 컴퓨터					
네트워크	파일 이름(N): 파일 형식(T):	 CardPrinter Binary File - 읽기 전용으로 열기(R)		•	열기(0) 취소
					•

Figure 92 Select Firmware

### (3) Firmware Update

- Click "Update" button to upgrade automatically, then the printer is upgraded after rebooting.
- 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.

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

CardPrinter Firmware Downloader v2.1.0.2 (20170217)
Devices : [IDP SMART-51 Cand Printer [SMART : US8005]
Card Printer Laminator
Version : 0.02.26
Binary File : E:\Download\Down\smart51_app_0_02_26_SPI.bin Browse
Manual Update Update Close
Device is Ready.
Program Start.
===== CONNECT TO DEVICE : IDP SMART-51 Card Printer [SMART : USB005]
CardPrinter Version : 0.02.26
•

Figure 93 Update Firmware

# 5. Optional device driver installation

In SMART-51 printer, you can install the optional devices that encode contact smartcard or contactless smartcard. If your purchased SMART-51 printer has optional devices, you should also install the smart card reader drivers.

## 5.1. Contact smartcard reader

In SMART-51 printer, you can install the two types of optional devices which are contact 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-51 printer to your PC.

### (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".



Figure 94 Contact smartcard reader driver installation

## (2) License agreement

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

PC CCID Setup			
nd-User License Agreement Please read the following license a	agreement carefully	ge	malto
END USER LICENS	SE AGREEN	IENT	
IMPORTANT-READ CA Agreement for Gemalto Soft agreement between you and ("Gemalto") that distributes t by this EULA. "You" are a	ware ("EULA") i a subsidiary or af he Software (as d	s a legal and filiate of Gen lefined below	binding nalto N.V. ) governed
2 accept the terms in the License	Agreement		
	Back	<u>N</u> ext	Cancel

Figure 95 License agreement

# (3) Installation

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



Figure 96 Installing the contact smartcard reader driver

# (4) Complete installation

When the installation is completed, the window is shown. Click the "Finish" to complete the installation steps.



Figure 97 Completing the smartcard reader driver installation

## 5.2. Contactless smartcard reader

In SMART-51 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-51 printer to your PC.

## (1) Connect SMART-51 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 picture, then Check "No, not that time" and Click "Next" to continue.



Figure 98 Found New Hardware Wizard

## (2) Choose the installation method

At the window as the picture, select "Install from a list or specific location" and click "Next".

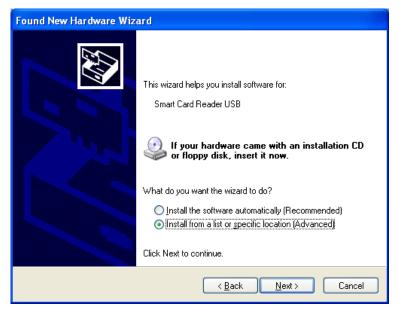


Figure 99 Installation method selection

#### (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 picture, and click "Next".

Found New Hardware Wizard			
Please choose your search and installation options.			
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.			
Search removable media (floppy, CD-ROM)			
✓ Include this location in the search:			
Z: 10ptions 10mnikey 5121 1Device Driver 11/1/32			
Don't search. I will choose the driver to install.			
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.			
< <u>B</u> ack Next > Cancel			

Figure 100 Driver location

# (4) Complete installation

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

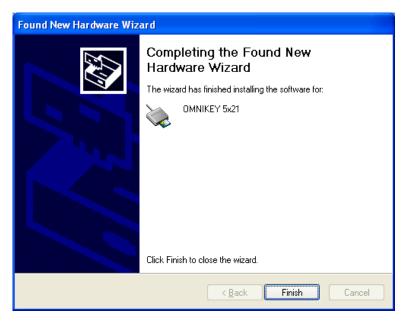


Figure 101 Completing the driver installation

# 6. Troubleshooting

# 6.1. Error Message

SMART-51 printer shows the error message in the LCD display when it occurs. Click the Left button to retry or the right button to cancel an operation.

The following shows the error message on your Smart Printer. For checking a status of printer, please use a CardPrinterTest or CardPrinterDiagnostics in the Utilities folder of Install CD.

No	LCD Message	Description and Countermeasures			
1	Card In Error	<ul> <li>Fail to move a card from the hopper to the printer inside.</li> <li> Check the card thickness and adjust the card thickness control lever</li> <li> Check cards are stuck because of static electricity</li> <li> Clean Hopper roller and cleaning roller</li> </ul>			
2	CardMove Int Err	<ul> <li>Fail to move a card in the printer.</li> <li> Remove a card if the ribbon is attached</li> <li> Check the rollers and cards, and clean them if they are polluted</li> <li> Check the operating state of the card feeding rollers and sensors</li> </ul>			
3	Fail to move a card between printer and other module(flipper/lamin         CardMove Ext Err       Check the rollers and cards, and clean them if they are polluted         Check the operating state of the card feeding rollers and sensors				
4	Card Out Error	<ul> <li>Fail to discharge a card after printing, encoding or laminating.</li> <li>Remove a card if the ribbon is attached</li> <li>Check the rollers and cards, and clean them if they are polluted</li> <li>Check the operating state of the card feeding rollers and sensors</li> </ul>			
5	TPH UpDown Error	<ul> <li>The Head Up/Down Motor or Sensor don't work correctly in printing or booting up</li> <li>Check the operating state of the Head Up/Down Motor and Sensor.</li> <li>Check the status of the mirror sticker in the Head Up/Down Gear.</li> </ul>			
6	IC UpDown Error	The IC Head Up/Down Motor or Sensor don't work correctly in printing, encoding or booting up.			

		Check the state of the Cable between a module and a main board		
		Check the operating state of the IC Motor		
		The printer can't search the ribbon panel in printing or booting up		
		Check the operating state of the Ribbon Motor		
7	Ribbon Seek Err	Check the operating state of the ribbon encoder sensor and gears		
		Check and clean the Color In/Out Sensor		
		Check the operating state of the color in/out Sensor		
		The printer can't wind the ribbon in printing or booting up.		
8	Ribbon Move Err	Check the operating state of the Ribbon Motor		
		Check the operating state of the ribbon encoder sensor and gears		
		Fail to read or write the magnetic stripe.		
		Check the surface and direction of magnetic card		
9	MAG R/W Error	Check the coercivity of magnetic card and encoding configuration		
		Check the rollers, encoder and cards, and clean them if they are polluted		
		Fail to read a track 1 of the magnetic stripe.		
		Check the surface and direction of magnetic card		
10	MAG T1 Error	Check the coercivity of magnetic card and encoding configuration		
		Check the rollers, encoder and cards, and clean them if they are polluted		
		Fail to read a track 2 of the magnetic stripe.		
	MAG T2 Error	Check the surface and direction of magnetic card		
11		Check the coercivity of magnetic card and encoding configuration		
		Check the rollers, encoder and cards, and clean them if they are polluted		
		Fail to read a track 3 of the magnetic stripe.		
	MAG T3 Error	Check the surface and direction of magnetic card		
12		Check the coercivity of magnetic card and encoding configuration		
		Check the rollers, encoder and cards, and clean them if they are polluted		
		Error occurs while printing		
13	Printing Error	Check a card is jammed		
		Check usage of a genuine ribbon and cards		
		Check the rollers, encoders and cards, and clean them if they are polluted		

14	Init Error	Error occurs while initializing Check the status of installation of ribbon and laminating film
		Check the laminator turning on if the laminator is installed
		Fail to communicate between a printer and a flipper/laminator
15	DeviceCon Error	Check the laminator turning on if the laminator is installed
10		Check a cable between a printer and a flipper/laminator
		Error occurs while laminating
16	Lami Error	Remove a card after opening a laminator top cover
		Check usage of a genuine laminating film and cards
		Error occurs while operating a flipper
17	Flipper Error	Remove a card after opening a flipper cover
		Check the card size
10	Dikker Zere	All ribbons are used
18	Ribbon Zero	Install the new ribbon after purchasing it in the place of purchase
	RibbonNotFound	Ribbon is not installed or not searched
19		Install a ribbon if not
		Check usage of a genuine ribbon
	TPH Not Found	Thermal Print Head is not installed or not recognized
20		Check the print head installation
		Contact the place of purchase
		Thermal Print Head is overheated
21	TPH Over Heat	Lower the temperature when the temperature of circumstance is too high
21		Take a stop for 10 minutes and print again.
		Contact the place of purchase if this message is shown regularly
		Error occurs when the abnormal printing data is transmitted.
22	Invalid Data	Replace the USB cable USB
		Change the USB port in the PC
		Reinstall the printer driver
	Wrong Password	The password is not correct
23		Input the correct password

		Contact the place of purchase if you forget the password
24	SetCommandFail	Failed to execute a command of the printer Replace the USB cable USB Change the USB port in the PC Turn off/on the printer
25	Spool Full	The printing data is full in the spooler This message disappear after printing all data to send Turn off/on the printer if the spool data is full without printing

# 6.2. Cleaning the printer

To maintain the best condition of SMART-51 printer, you must clean the printer periodically. If you use the exclusive long cleaning card as the picture, you can clean the printer easily. For purchase the exclusive long cleaning card, ask to SMART-51 printer provider.



Figure 102 Exclusive long cleaning card for SMART-51 printer

If the exclusive long cleaning card is ready, click the "Clean Printer" in the service tab of SMART-51 printer driver. After click, Clean Printer program to clean the printer is run.

🛱 IDP SMART-51 Card Printer Properties X					
General Sharing Ports Advanced Color Management Security Service					
Driver Version : 2.17.3.27 DP SMART-51 Card Printer Printer ID : SMART Serial : 5DID000000H10877 Version : 1.00.02 [ID][DC] Ribbon Type : P-YMCKO [ID][DC] Ribbon Balance : (237 / 250 ) C encoder connected Serial : Version : 0.01.04 Version : 0.01.04 Version : 0.01.04 Flipper tray top status					
Print technical support sheet Clean Printer					
OK Cancel Apply					

Figure 103 Printer cleaning start 80

Step 1. Connect the SMART-51 printer to PC and turn it on, and prepare the exclusive long cleaning card.



Figure 104 Printer cleaning Step 1



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

Figure 105 Printer cleaning Step 2

**Step 3.** Insert the exclusive long cleaning card into the printer through input hopper. When the exclusive long cleaning card is inserted to the cleaning roller, it will be move



automatically. It is normal that the exclusive long cleaning card is inserted to the ends and rollers are moving to clean.

Figure 106 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.



Figure 107 Printer cleaning Step 4

**Step 5.** Wait until the cleaning is completed. When the cleaning is completed, the exclusive long cleaning card will be ejected automatically as the picture.



Figure 108 Printer cleaning Step 5

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



Figure 109 Printer cleaning Step 6

# 6.3 TPH (Thermal Print Head) replacement

1. Check the serial number and the resistance of new Thermal Print Head as the Picture.

TPH type: A = KEE, B = KPE

Serial No.: see the red box.

TPH resistance: see the green box.



Figure 110 Thermal Print Head

## 2. Set up the new Print Head's configuration using CardPrinterConfig program.

Step1: Run 'CardPrinterConfig' in Utilities of the installation CD and click expansion button.

Step2: Click "Change Head" in the extended setup.

Step3: Input the Print Head's Serial No., Resistance and Type (choose KEE or KPE) on the Print Head's label, and click "OK".

Step4: Click "Set Config" to set the new Print Head's configuration.

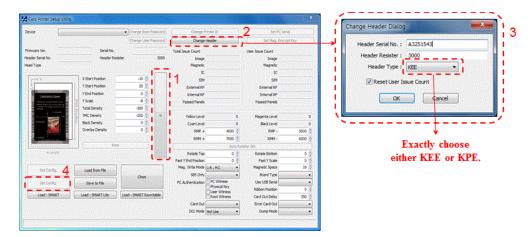


Figure 111 Print head setup

## 3. Replacing the new Print Head

Step1: Remove the old Print Head from the top cover.

- (1) Turn off the printer and open the top cover.
- (2) Hold the Print Head and press the locked hook, then the Print Head is disconnected..
- (3) Disconnect the Print Head from print head wire carefully.

(Caution: Print Head is possible to HOT.)

Step2: Installing the new Print Head

- (1) Connect new Print Head to the print head wire.
- (2). Put the new Print Head on the Shift and pull it up until be locked..

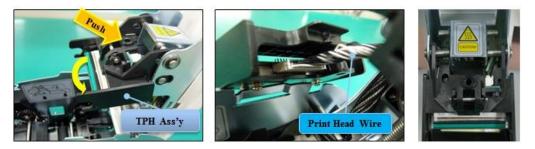


Figure 112 Print head replacement

4. Setup the print position and the color density.

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

#### 5. Calibration of Print Head Angle

To get the best print quality, the Print Head 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 right picture), you could make good quality of print.

(Use the appropriate screw driver to adjust, and turn the screw by 90 degrees at a time.)

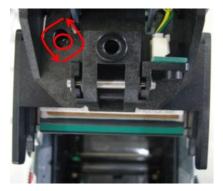


Figure 113 Print head angle

# 6.4. Laminator Head Replacement

#### 1. Disassemble the Laminator Head

- 1. Open Top Cover. (Pic. 1)
- 2. Push the Head Ass'y in the direction of the arrow and separate it from Top Cover. (Be Careful of burns from high-temperature) (Pic. 2)
- 3. Turn the Head Ass'y and unbind cable fixing. (Pic. 3)
- 4. Disconnect sensor wire(Con.1) and Laminator Head wire(Con.2) from disassembled Head Ass'y. (Pic. 4)
- 5. Completely separate the Head Ass'y from main body. (Pic. 5)





<Pic. 4>



<Pic. 2>



<Pic. 5>



<Pic. 3>

#### 2. Assemble the new Laminator Head

- 6. Connect sensor wire(Con.1) and Laminator Head wire(Con.2) through the hole on top of the Head Ass'y. (notice to the direction) (Pic. 6)
- 7. Fix the cables using the retainer coil. (Pic. 7)
- 8. Turn the Head Ass'y and place its upper part to fixing point of Top Cover. (Pic. 8)
- 9. In reverse order of disassembly, push the Head Ass'y in the direction of the arrow and fix to the hook. (Pic. 8)
- 10. With connected PC, Launch [CardPrinterConfig], open [Change Head] window, insert the value of R2 on the back of the Head(Pic. 9) into [Lami. Head Resister] section and save the settings. The Resister value must be adjusted before Laminating. (Pic. 10)



HDR-0670K-4 T R2: 45.3 JAPAN 17005 G <Pic. 9>

	<u> </u>		
1. Click [Change Head]	Device IDP SMART 51 Card Printer [SMART : USB002]	Change Root PW     Change Print     Change User PM7     Change He	
2. Insert Resister value	Card Printer Laminator	Cornig	
Into [Lami. Head	Laminator Version 0.01.05 Lami. Head Resister 453 Lamina	Change Head Dialog	Dear Count
Resister] section on	Information Film Type HOLO 1.0MIL Film Remain	Header Serial No. : B7300294 Header Resister : 2888	1 Laminating
pop-up window	Laminator Code [SM][00][00] Film Code	Header TV: KPE	700 Torque Move Min 500
3. Click [OK] to close	Heater Temperature     160     A     Laminating Pl       Laminating Move Pulse     8250     A     Lami. Start C	Lami. Head Resister 45.3	210 Out Speed 210
pop-up window	Torque Laminating MAX 700 V Torque Lamin Laminating width Pulse 6225 V Film Attribute	Reset User Issue Count     OK Cancel	210
4. Click [Set Config] to			
save	Get Config. Load from File	Close	-
(	Set Config. Save to File		

<Pic. 10>

## 6.5. Card movement

## 6.5.1. 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 2.4 in this manual.
- Cards have static and moisture. Remove the moisture or static.
- 6.5.2. 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-51 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 6.2

- 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.

#### 6.5.3. 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.

# 6.6. Printing quality

## 6.6.1. 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.

## 6.6.2. 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.

## 6.6.3. Unclear or not uniform print.

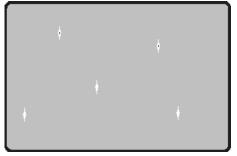


Figure 114 Printing quality trouble 1

- 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.



Figure 116 Printing quality trouble 3

#### 6.6.4. 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.

## 6.6.5. 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.

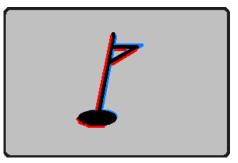


Figure 117 Printing quality trouble 4



Figure 118 Printing quality trouble 5

# 6.7. Magnetic stripe encoding

## 6.7.1. 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.

## 6.8. General operation

#### 6.8.1. 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.

## 6.8.2. 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.

## 6.8.3. 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-51 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. Specification

		SMART-51S	SMART-51D	SMART-51L
Print Type		Dye-Sublimation		
Print Area		Edge to Edge		
Resolution		300dpi		
Dual Side Printing		Option (with Flipper)	Yes	Yes
Card Feeding		Automatic		
Card Size		ISO CR80 or ISO CR79 (option-Factory installed)		
Card Thickness		0.38mm (15mil), 1.0mm (40mil)		
Card Type		PVC, PET, Composite PVC		
Monochrome		5 sec./card (720 cards/hour)		
ҮМСКО		Max. 17 sec./card (212 cards/hour)		
ҮМСКОК		_ Max. 22 sec./card (164 cards/hour)		
Mode		_	_	Single & Dual
Film		_	_	0.6mil, 1.0mil
	Simultaneous	_	_	22 sec./card (YMCK)
Speed	(Single)	_	_	32 sec./card (YMCKK)
Opeed	One by One	_	_	43 sec./card (YMCK)
	(Single)	_	_	53 sec./card (YMCKK)
Input Hopper		100 Cards / 200 Cards with cover open		
Output Hopper		Front : 40 Cards / Rear : 100 Cards (Optional Rear-side Stacker)		
Memory		64MB RAM		
Display		2 Line LCD		
Control Panel		2 LED Buttons		
Supported Platforms		MS Windows 7/ 8/ 10, Mac OS, Linux		
Communication		USB, Ethernet (Option)		
Power Supply		Free Voltage (AC 100/220V, 50~60Hz)		
Power Consumption		48	48	96
Temp. / Humidity		<b>15~35℃ / 35~70%</b>		1
Millimeter (WxLxH)		165 x 390 x 210	165 x 498 x 210	165 x 675 x 210
Inch (WxLxH)		6.5 x 15.4 x 8.3	6.5 x 19.6 x 8.3	6.5 x 26.6 x 8.3
Kg / Lbs		4.5 / 10	5.2 / 11.5	8.8 / 19.4
Magnetic		ISO 7811 (Track I, II, III Read/ Write, HiCo/ LoCo), JIS II		
Contact		ISO 7816 (ID-1)		
Contactless		MIFARE, ISO 14443 (Type A/ B), ISO 15693, DESFIRE, iCLASS		
I		CB, CE, FCC, KC, CCC		
	Print Ard         Resolut         Dual Sid         Card Fe         Card Fi         Card Tr         Card Tr         Card Tr         Card Tr         Monoch         YMCKC         YMCKC         YMCKC         Output I         Monoch         Speed         Input Ha         Output I         Memory         Display         Control         Support         Commu         Power S         Power C         Temp. /         Millimet         Inch (W         Kg / Lbs	Print Area Resolution Dual Side Printing Card Feeding Card Size Card Thickness Card Type Monochrome YMCKO YMCKO YMCKOK Mode Film Speed Node Film Simultaneous (Single) One by One (Single) One by One (Single) One by One (Single) One by One (Single) One by One (Single) One by One (Single) Display Control Panel Supported Platforms Control Panel Supported Platforms Control Panel Supported Platforms Control Panel Supported Platforms Control Panel Supported Platforms Control Panel Supported Platforms Comunication Power Supply Power Consumption Temp. / Humidity Millimeter (WxLxH) Inch (WxLxH) Kg / Lbs Magnetic Contact	Print TypePrint AreaPrint AreaOption (with Flipper)Dual Side PrintingOption (with Flipper)Card FeedingISO CR80 ofCard SizeISO CR80 ofCard Thickness0.3Card TypePMonochrome5YMCKOK	Print Type       Dye-Sublimation         Print Area       Edge to Edge         Resolution       300dpi         Dual Side Printing       Option (with Flipper)       Yes         Card Feeding       Automatic         Card Size       ISO CR80 or ISO CR79 (option-Fac         Card Thickness       0.38mm (15mil), 1.0mm (4t         Card Type       PVC, PET, Composite PV         Monochrome       5 sec./card (720 cards/ho         YMCKO       Max. 17 sec./card (212 cards         YMCKOK       _         YMCKOK       _         Mode       _         Film       _         Speed       Simultaneous         (Single)       _         One by One       _         One by One       _         Output Hopper       Front : 40 Cards / Rear : 100 Cards (Option         Memory       64MB RAM         Display       2 Line LCD         Control Panel       2 LED Buttons         Supported Platforms       MS Windows 7/ 8/ 10, Mac OS         Communication       USB, Ethernet (Option)         Power Supply       Free Voltage (AC 100/220V, 55         Power Supply       Free Voltage (AC 100/220V, 55         Power Supply

Specifications and availability may change without notice.