# IDP SMART-32

## User Manual

SMART-32S, SMART-32D, SMART-32R




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To make a warranty claim you must contact an IDP Reseller. You will be responsible for packaging the printer for shipment and the costs of shipping and insurance of the printer from the point of use of the printer to the IDP Reseller. The IDP partners will bear the costs of shipping and ensuring the printer from the repair location to the address from which the printer was shipped.
Before returning any equipment for in-warranty or out of out-of-warranty contact an IDP partner 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 in the quick install guide.

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# 1. Basic Information

## 1.1. Printer external features

For user convenience, the SMART-32's status can be seen through LED and the printer can be controlled by LED button. Power is provided by the 24V adapter included with the printer, and communication with a PC or other external device is possible via USB, Network port, or Wi-Fi (Option).

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

**SMART-32 Front Features**




❶ TOP Cover open button

❷ Fan

❸ Input Hopper

❹ LED button

❺ Stacker

Figure 1 SMART-32 Front Features

## SMART-32 External Features (Rear)




6 Power Switch

7 24V Power Connector

8 Network Port

9 USB Port

Figure 2 SMART-32 Rear Features

**SMART-32S (Figure 3)** is the standard card printer, it can be printed in single side with the encoding. This manual is prepared based on SMART-32S.

**SMART-32D (Figure 4)** has a flipper which can enable to print in both sides. SMART-32D can print the both side of the card with the encoding.

**SMART-32R (Figure 5)** is the rewritable card printer. It can rewrite on rewritable card in single side with encoding.

**SMART-32 LCD Option (Figure 6)** enhances user convenience to check the status of the SMART-32S/D/R printer more intuitively and allows user to operate the printer with two left and right LED buttons on the LCD panel.



Figure 3 SMART-32S (Standard)



Figure 4 SMART-32D (Dual)



Figure 5 SMART-32R (Rewritable)



Figure 6 SMART-32 (LCD Option)

## 1.2. Printer internal features

In SMART-32 printer, the ribbon is installed by a ribbon cartridge which can be used semi permanently. The following shows the inside functional features found on your SMART-32 printer.




Figure 7 SMART-32 Internal features

① **Card Thickness Control Lever**

Adjust the cards thickness.

② **Stacker (Output Hopper)**

Collect the printed card and/or encoded cards. Up to 25 cars are loaded, and if printing continues, the additional printed/encoded card is ejected out. It can be removed when pulling forward.

③ **Input Hopper**

Load the cards for printing. Maximum 80 cards are loaded.

④ **Ribbon Cartridge**

Install the Ribbon and the Disposable Cleaning Roller.

### ⑤ Thermal Print Head

This enables the cards to be printed.

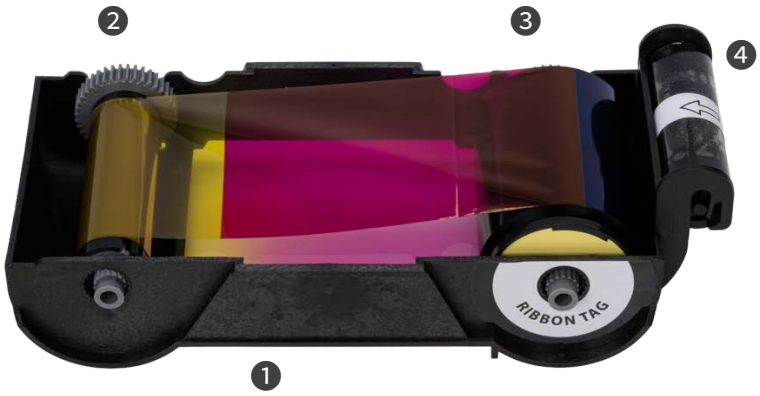


**This is very hot after printing. Do not contact the surface of the Thermal Print Head with fingers or a sharp metal object to avoid degrading print quality or damaging print head permanently.**

# 1.3. Ribbon Cartridge features

Install the Ribbon and the Disposable Cleaning Roller into the Ribbon Cartridge.

> **SMART-32 Ribbon Cartridge is compatible with SMART-31's, but the ribbon is not. The color of the ribbon tag for SMART-32 is yellow.**




❶ Ribbon Cartridge

❷ Take-up part

❸ Supply part

❹ Disposable Cleaning Roller

그림 8 리본 카트리지 구조

**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 IDP printer reseller.

**② ③ Take up & Supply parts**

- Ribbon is wrapped to the supply parts. It should be installed to match the Ribbon Tag label on Cartridge and Ribbon Tag 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 new Ribbon

## 1.4. Display

The status of SMART-32 is displayed on the Watchman program of the Windows tray.

## 1.5. Character LCD and buttons (Option)

The Character LCD panel (Option) of SMART-32 Printer consists of 2 lines LCD and 2 buttons. The 2 buttons have the functions as shown in the figure 9.




그림 9 SMART-32 디스플레이 및 버튼

The status of SMART-32 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 |
| **System Ready** | Ribbon Type/Balance | Sleep (Hold on for 5 seconds) |
| | User Printed Counts | Initializing (When Sleep Mode) |
| | Do Test Print | Ok |
| | Network IP Address | |
| | 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 pushing both LCD buttons for 5 seconds) | |

# 2. Printer Installation

## 2.1. Connecting a power and a communication cable

### 1. SMART-32S / 32R

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




Figure 10 SMART-32S Connection of power and communication cable

### 2. SMART-32D

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 cable connection.




Figure 11 SMART-32D Connection of power and communication cable

## 2.2. Installing the ribbon

Before printing, prepare the related items such as cards, a Ribbon and a Disposable Cleaning Roller. In this section, we invite you to know the proper method of installing the Ribbon and the Disposable Cleaning Roller into the printer.

1. **Turn off the printer.**

2. **Open the Printer Top Cover by pressing the top cover open button.**




Figure 12 Top Cover open

3. Take out the ribbon cartridge.




Figure 13 Take out the Ribbon Cartridge

4. Install a ribbon into the ribbon cartridge as the below picture.

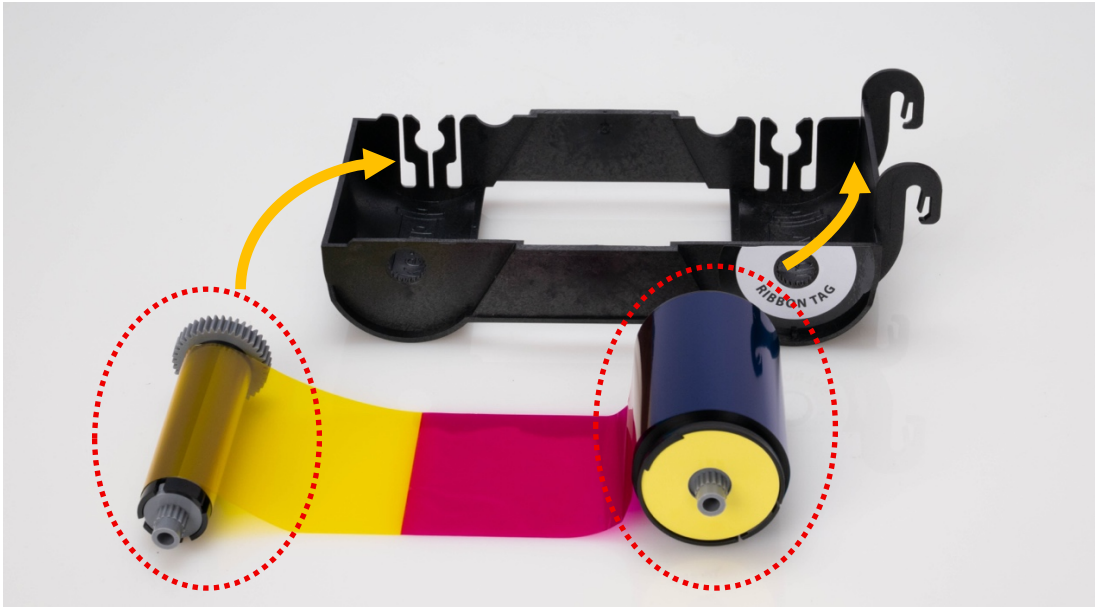



Figure 14 Installing a ribbon - 1

5. Insert the supply core of the ribbon to hole ① and press the opposite core ②.

Insert the take-up cores of the ribbon same method. After inserting, tighten the ribbon.

> If the ribbon is not tightened, a rolling up error might be happened.

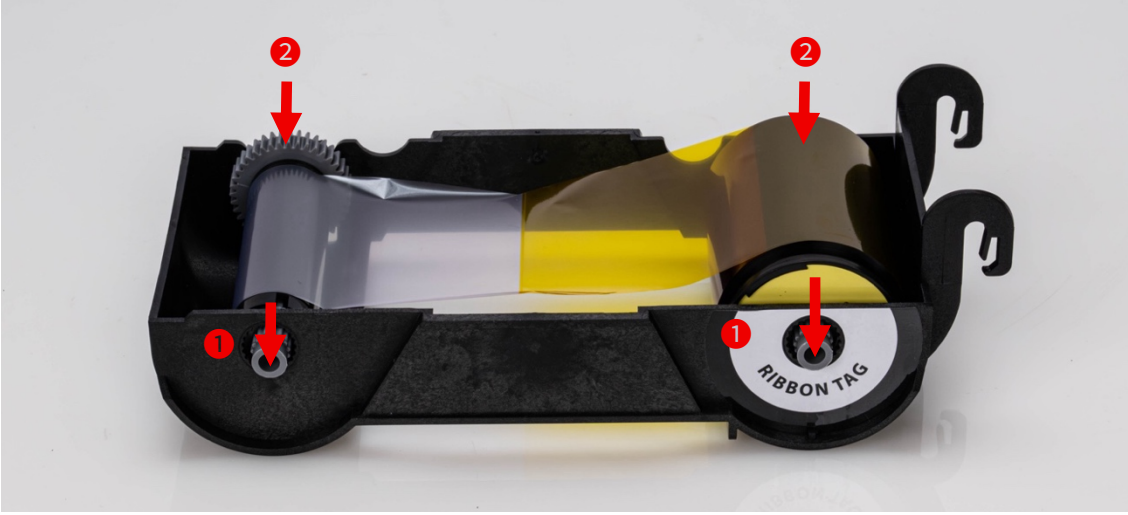



Figure 15 Install a ribbon 2

6. Install the Disposable Cleaning Roller to the Ribbon Cartridge.




Figure 16 Installing a Disposable 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.

**Do not use without peeling off the protective wrapper because the cleaning roller cannot perform its function.**




Figure 17 Peeling the protective wrapper

8. Install the Ribbon Cartridge into the printer after installing the Ribbon with a Cleaning Roller to the Cartridge as the below picture.




Figure 18 Installing the Ribbon Cartridge

9. Close the Top Cover until there is a ‘click’ sound.

> **If it can’t be closed properly, check the installation state of the ribbon cartridge.**




Figure 19 Closing Top Cover

## 2.3. Loading the cards

This section shows how to load the plastic cards.

**10.** Open the Input Hopper Cover. Move the Card Thickness Control Lever left and right to adjust it to the thickness of the card.

**If the thickness is set smaller than the card being used, the card won't be able to be inserted. If it is set larger than the card being used, two cards will be able to be inserted, which may cause an error.**

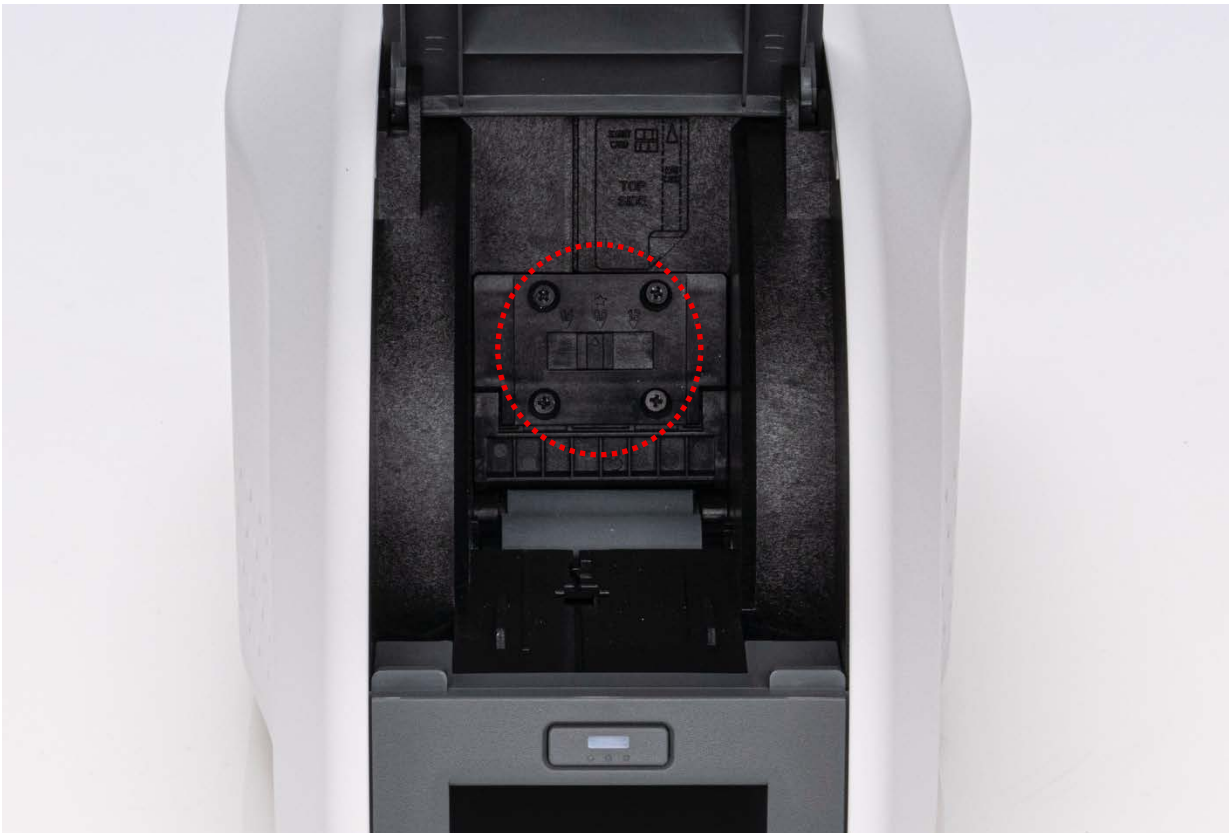


Figure 20 Card Thickness Control Lever

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

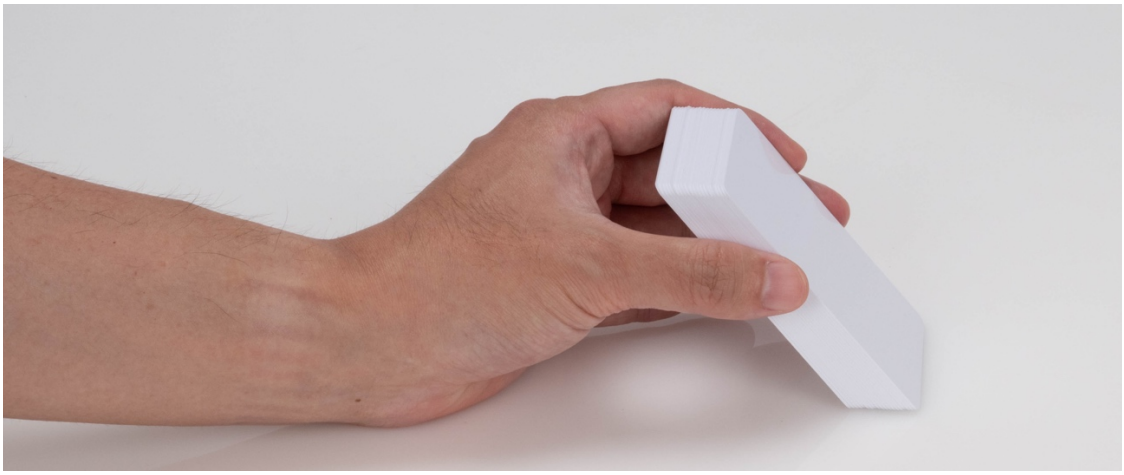


Figure 21 Preparing cards 1

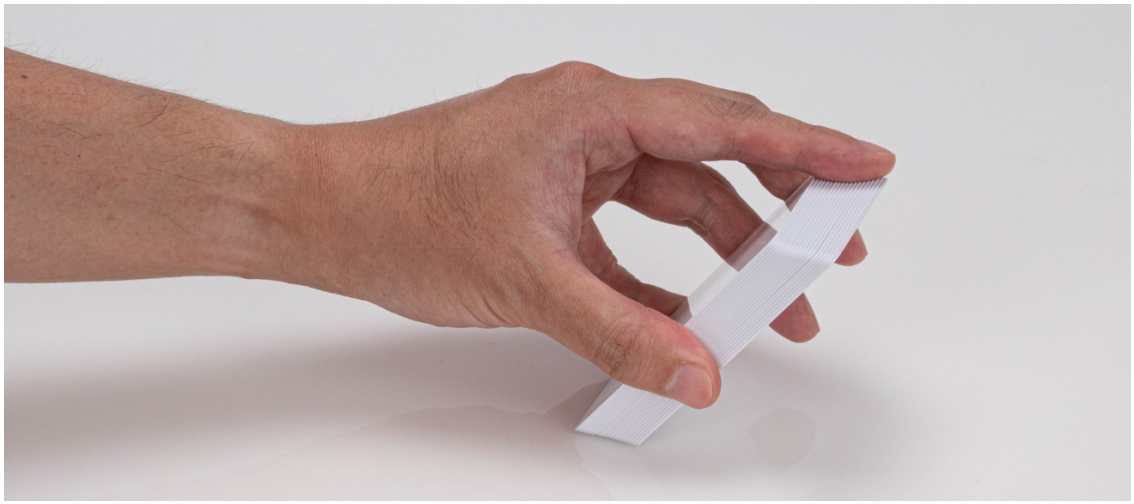


Figure 22 Preparing cards 2

12. Stand the stack of cards vertically after separating them.

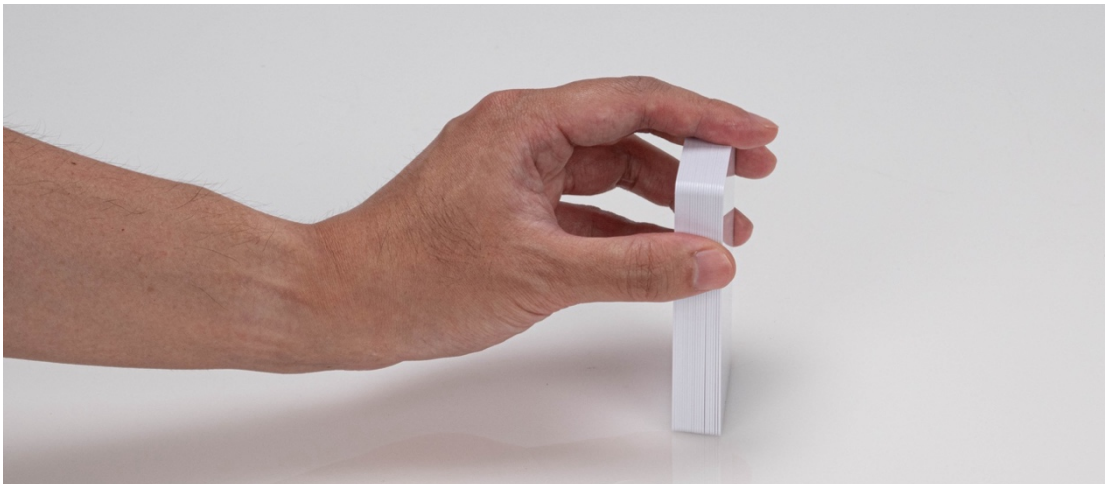


Figure 23 Loading cards 1

13. Load the cards on the Input Hopper properly and close the Hopper Cover.




Figure 24 Loading cards 2

**14.** When inserting a card one by one, insert it to the end of hopper as below picture.



Figure 25 Loading cards 3



Figure 26 Loading cards 4

## 2.4. The withdrawal of printed cards

Printed cards are ejected to the Stacker on the front bottom side of SMART-32.

### SMART-32 withdrawal of printed cards




Figure 27 Tacking printed cards

SMART-32's stacker can be detached by pulling it forward. You can take the printed cards easily or drop cards down if you want.

# 2.5. Printer Driver Installation (Windows 7 / 8 / 10 / 11)

## 1. Driver Download

Scan the QR Code on 'Quick Installation Guide' provided with the printer or go to www.idp-corp.com and search for "SMART-32 Driver" in the "Support" - "Download" menu.
After that, download the "SMART-32 Printer Driver.

> **Turn off the printer before beginning when using a USB connection.**
> **Turn on the printer and set the network configuration before beginning when using a network connection.**

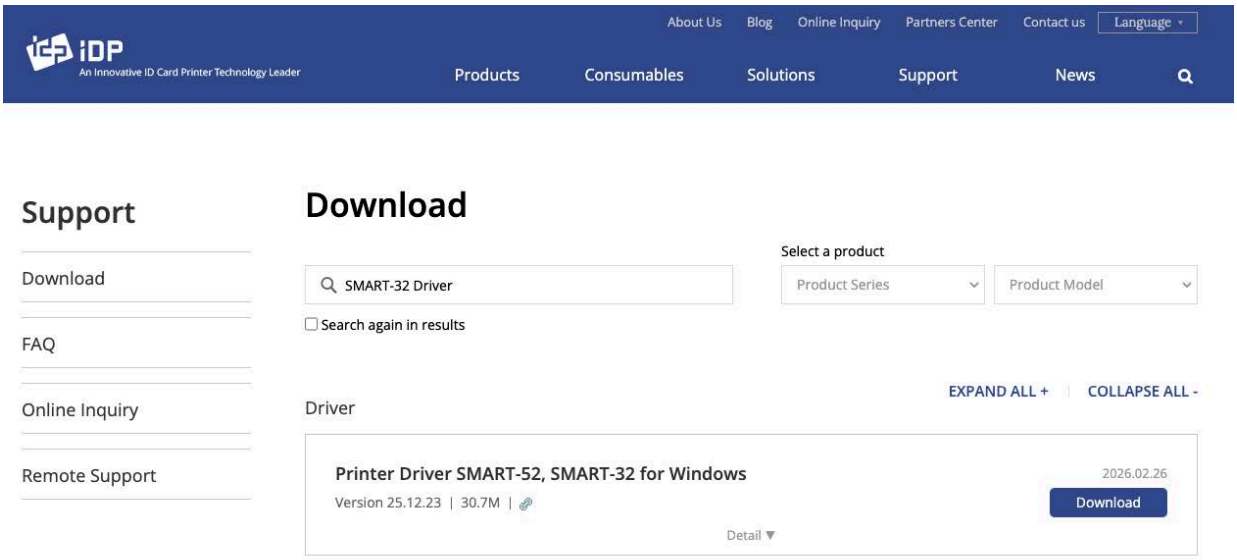



Figure 28 Install printer driver 1

## 2. Run the installation file

Extract the driver installation file and its components from downloaded file and run the “DDinstall.exe” in the “SMART Printer Driver” folder.

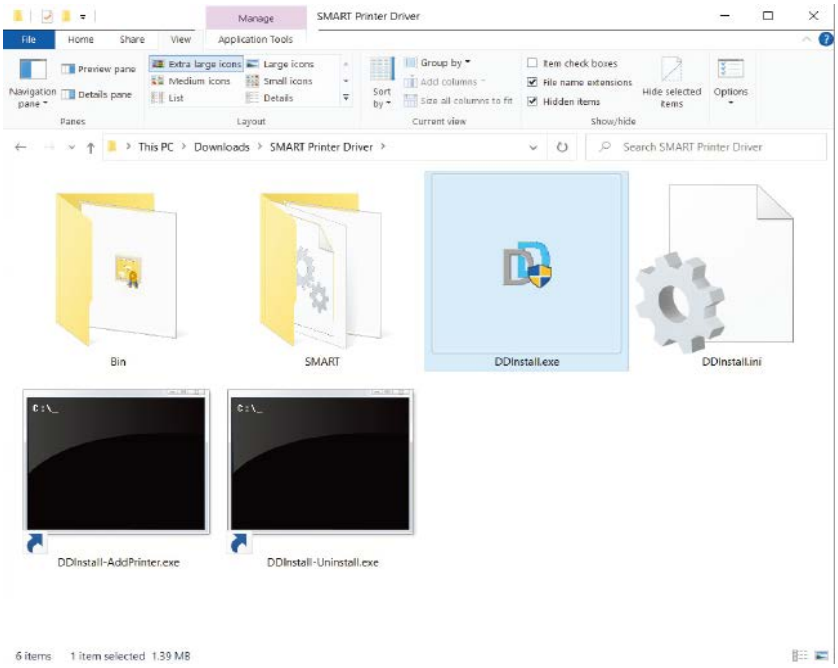



Figure 29 Install printer driver 2

## 3. User Account Control

If the “User Account Control” pop-up window opens, Click “Yes”.

**※ Depending on your computer’s settings, you may be prompted to supply local admin credentials to authorize the installation of the driver.**

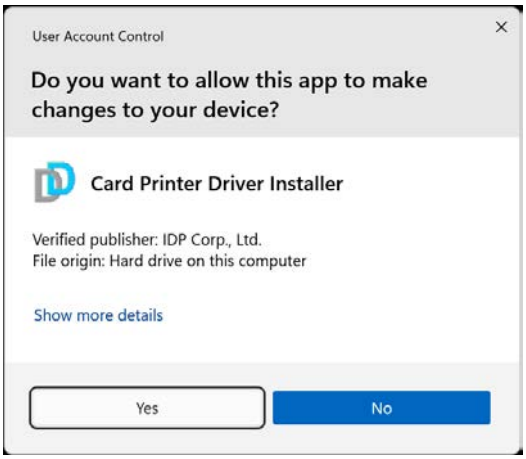



Figure 30 Install printer driver 3

## 4. Driver Installation Step 1

1 After changing the language from the default English to another language you want, click “Next” button. This process will take several minutes to remove any older driver.

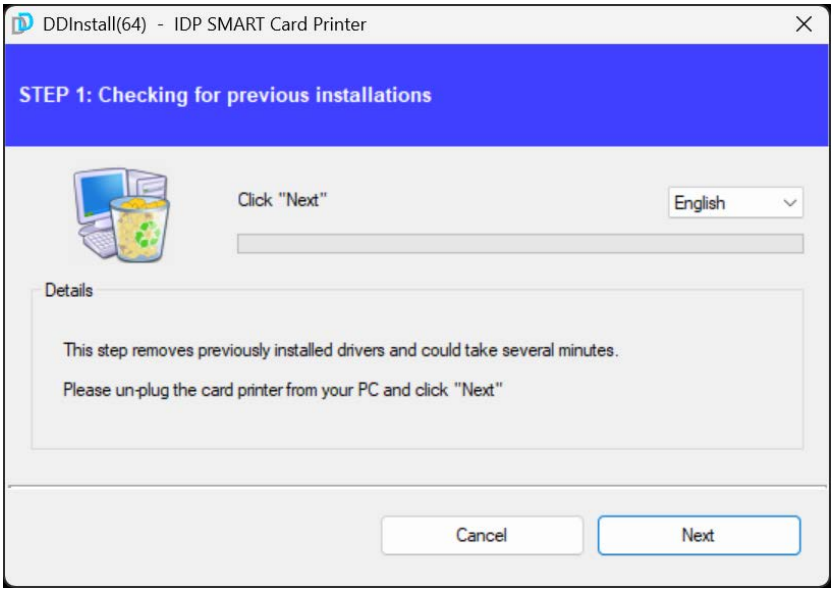



Figure 31 Install printer driver 4

## 5. Driver Installation Step 2

Click “Next” to install the driver on your Windows.

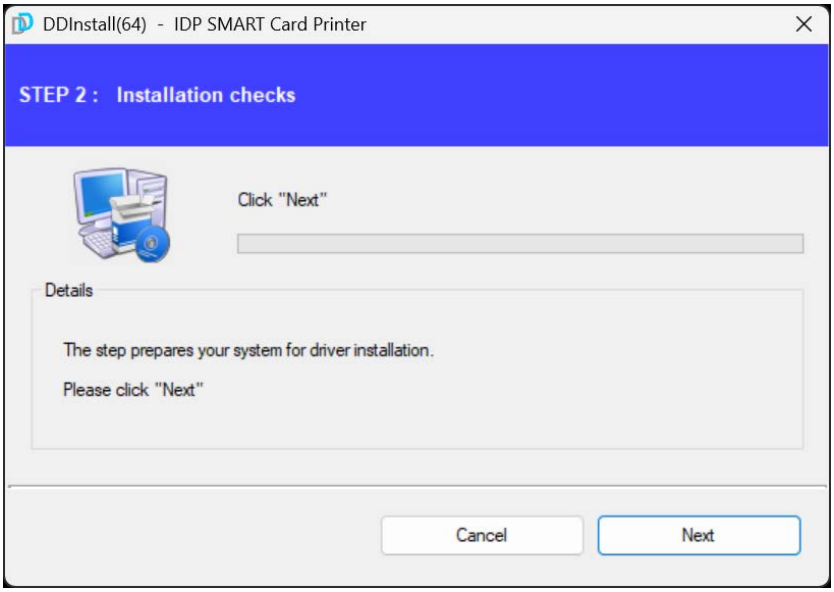



Figure 32 Install printer driver 5

## 6. Turn on the printer

Connect the USB cable to the PC and turn on the printer.

> **Connect the USB Cable to the PC before turning on the printer.**



Figure 33 Install printer driver 6

## 7. Driver Installation Step 3-1: USB connection

In case of USB connection, click “Next” and move to ‘9. Driver Installation Step 4:’.

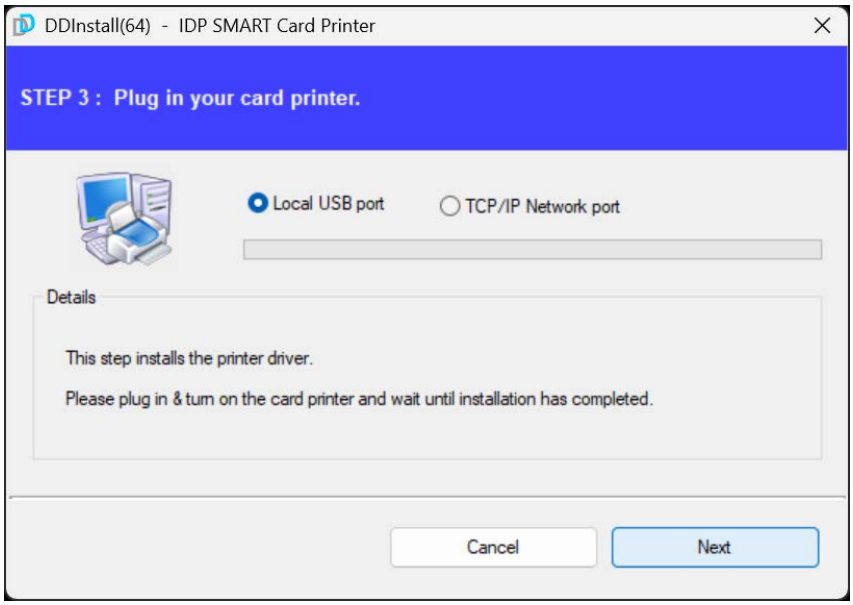



Figure 34 Install printer driver 7

## 8. Driver Installation Step 3-2: Network connection

In case of Network connection, select the “TCP/IP Network port’ radio button, and SMART-32 printer on the pop-up list and click ‘OK’, and then click ‘Next’ button.

**If no printer comes out on the list, check the printer’s network connection and setting. If the printer is on the different network from PC, please type the IP address directly.**

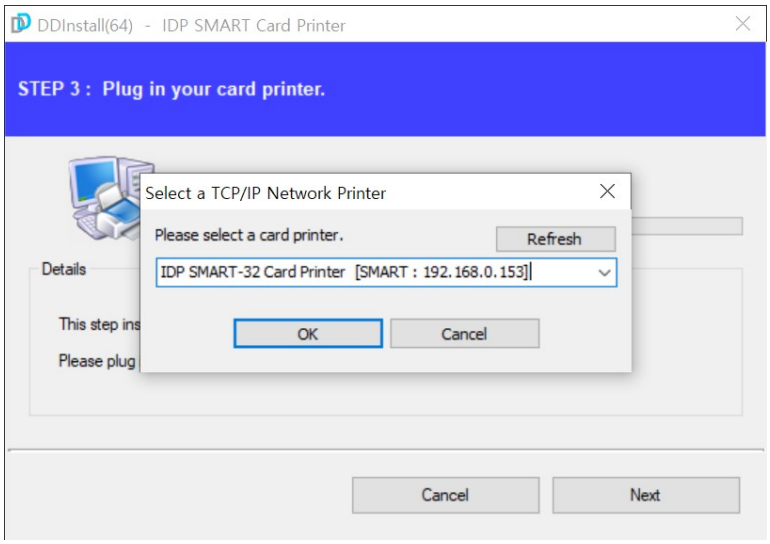



Figure 35 Install printer driver 8

## 9. Driver Installation Step 4

When driver installation is completed, please click “Close” button.

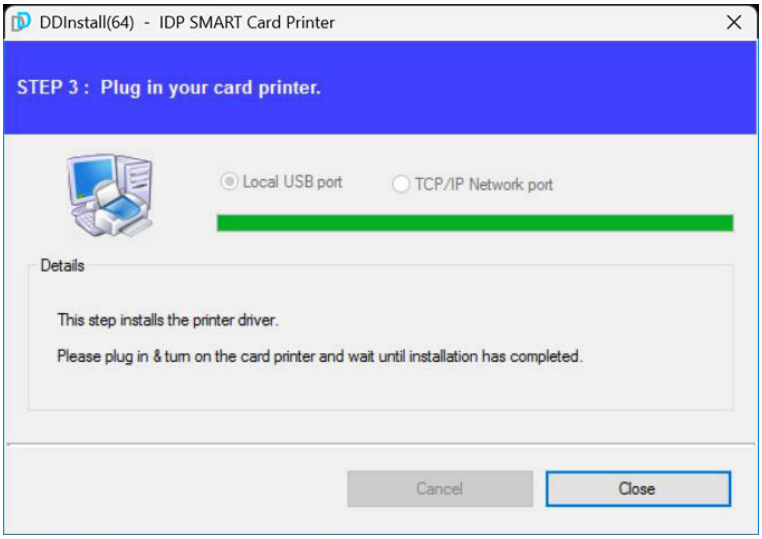



Figure 36 Install printer driver 9

## 10. Check the driver installation Step 1

Please open “Printers & scanners” from “Bluetooth & devices” (or “Devices”) on the Windows “Settings”. Select the “IDP SMART-32 Card Printer” and “Printer Properties”.



**※ Windows 7/8, open ‘Control Panel’ and select “Device and Printers”. Right-click “SMART-32 Card Printer” and select “Printer Properties”.**




Figure 37 Install printer driver 10

## 11. Check the driver installation Step 2

Select “General” tab and click “Print Test Page” in “IDP SMART-32 Card Printer Properties” window.

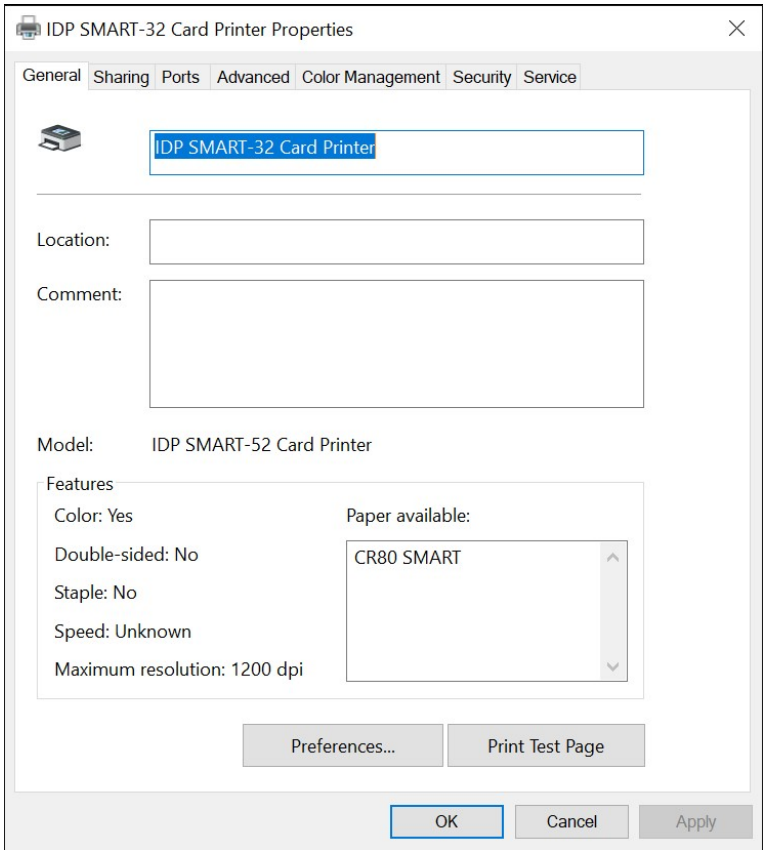



Figure 38 Install printer driver 11

## 12. Check the driver installation Step 3

Check the Test Card to see if it is printed properly. If so, click “Close”.

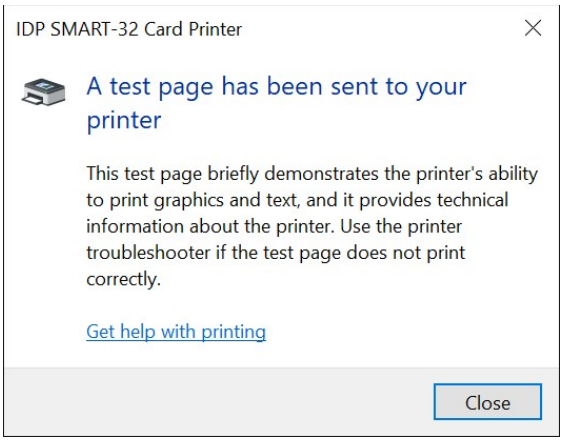



Figure 39 Install printer driver 12

# 3. Driver Configuration

SMART-32 can print by applying various properties required for card printing. Please open “Printers & scanners” from “Bluetooth & devices” (or “Devices”) on the Windows “Settings”. Select the “IDP SMART-32 Card Printer” and click “Printer Properties”.

## 3.1. Printing Preferences

### 1. Open Printing Preferences

Click “Preferences...” button.

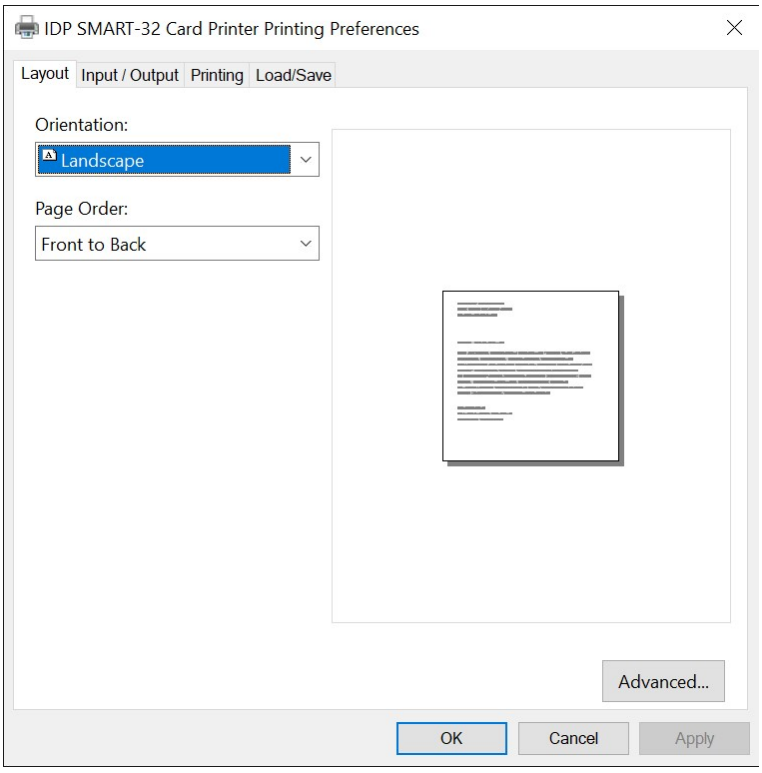



Figure 40 Printing Preferences

## 2. Layout

You can select either Landscape (horizontal) or Portrait (vertical) printing direction. To apply your selection, click “OK”.

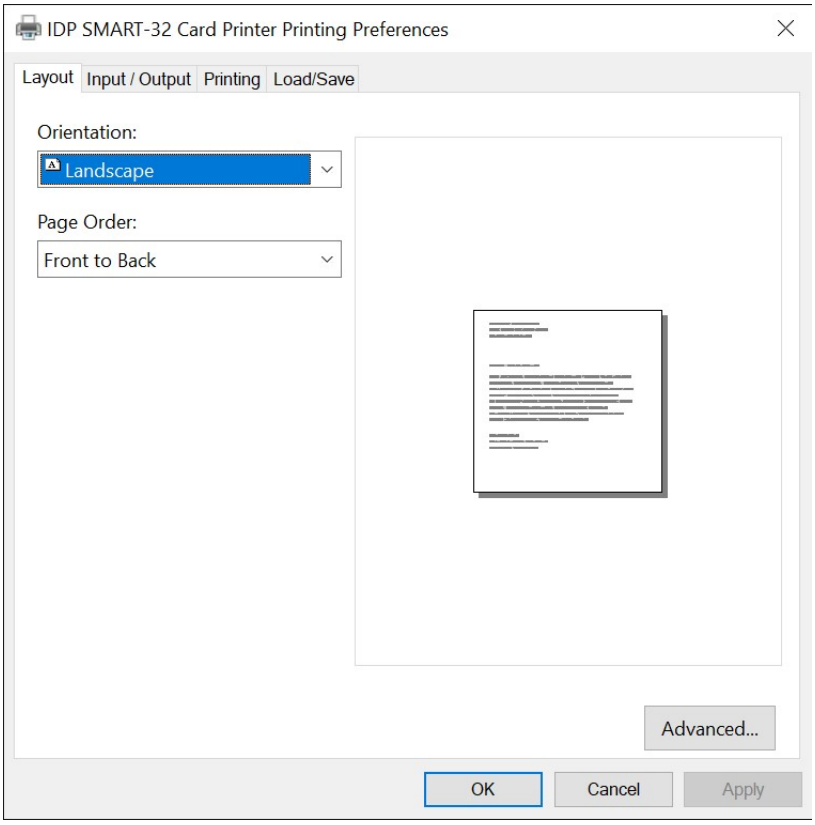



Figure 41 Layout

## 3. Input / Output

**Supply Tray**

**Supply :** "Auto" is selected by default. Please select the specific hopper number if the multi-hopper is connected.

**Tray :** SMART-32 supports only CR-80 card, so please select "CR80 SMART".

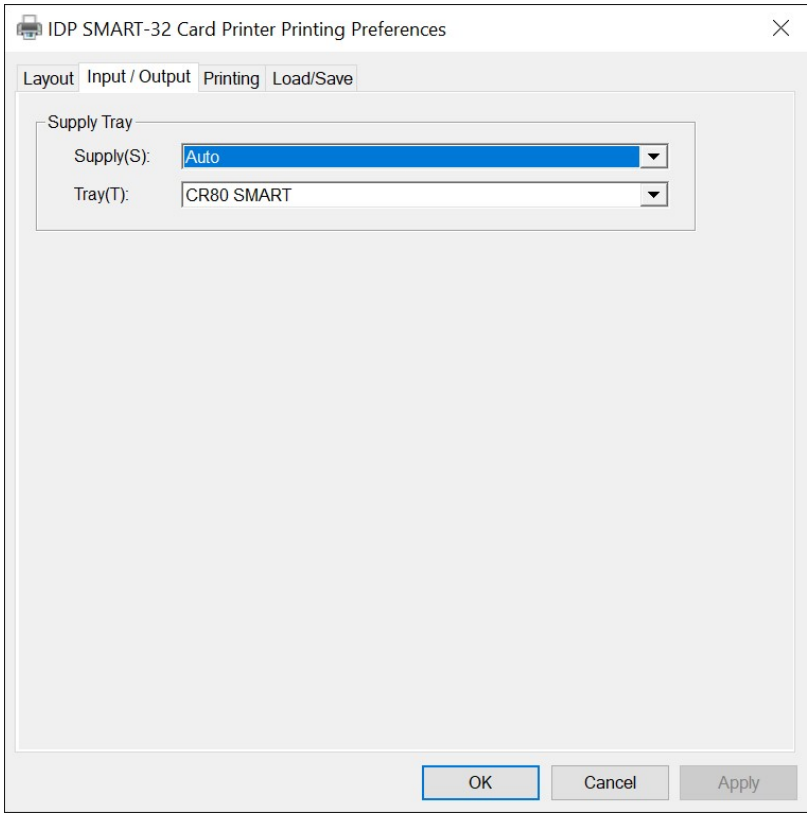



Figure 42 Input / Output

## 4. Printing

**Do Printing** : This option should be checked to print a card. If you don't want to print but encode only, please uncheck this box.

**Print Side** : You can select "Top" for simplex or "Both" for duplex printing. Duplex printing is only possible with the SMART-32D.

**[ Front / Back ]**

**Color** : color or monochrome printing is selected. It depends on the installed ribbon type.

**Flip :** You can flip an image 180 degrees, vertically or horizontally, depending on your cards and software needs.

**Media / Mask** : You can indicate the area to print or not print by using a predesigned mask, a user defined mask (e.g., SMARTmark Security, smartcard chip cutouts, magnetic stripe card, etc.).

**[ Printing ]**

**Ribbon** : The type of installed ribbon is displayed. You don't need to select this option as SMART-32 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
- **Partial :** Partial print mode. The TPH is applied partially for the print area only. Printing speed can be faster than standard mode.

**Color Sense** : Set print image's color sense.

**Ribbon Save** : Set the both sides (Front:YMCO, Back:K) to save YMCKO ribbon. It is only activated while printing both sides option is set and YMCKO ribbon is installed.

**Dither** : There are 5 possible selections, Threshold, Random, Diffusion, Half-tone, and Half-tone2 Dithering algorithm. It is performed with K and KO ribbon only.

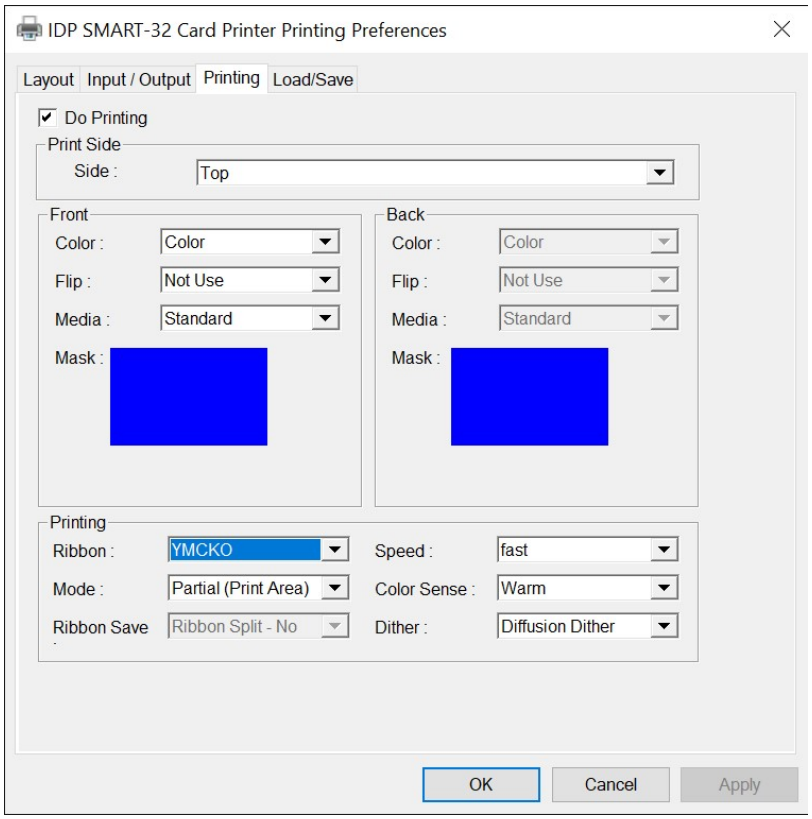



Figure 43 Printing

User defined mask uses 24bit 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)) : Fluorescent (UV) only

## 5. Encoding

This tab will be displayed only when Magnetic encoder is installed in the SMART-32.

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

**Coercivity** : You can select the coercivity to encode. It depends on the card to be used.

- **Loco** : 300 / 600 Oe
- **HiCo** : 2760 Oe
- **SpCo** : 4000 Oe
- **Auto** : Detect automatically

**Repeat Count** : If encoding fails, you can select the number of retries before ejecting the card.

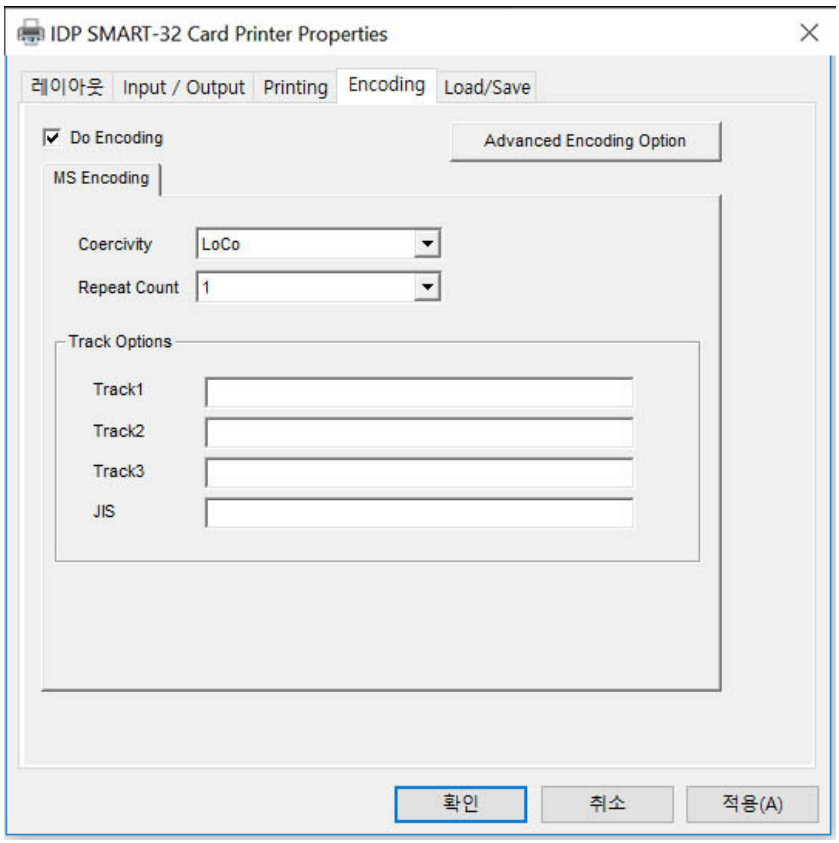



Figure 44 Encoding

## 6. Encoding Advanced Option

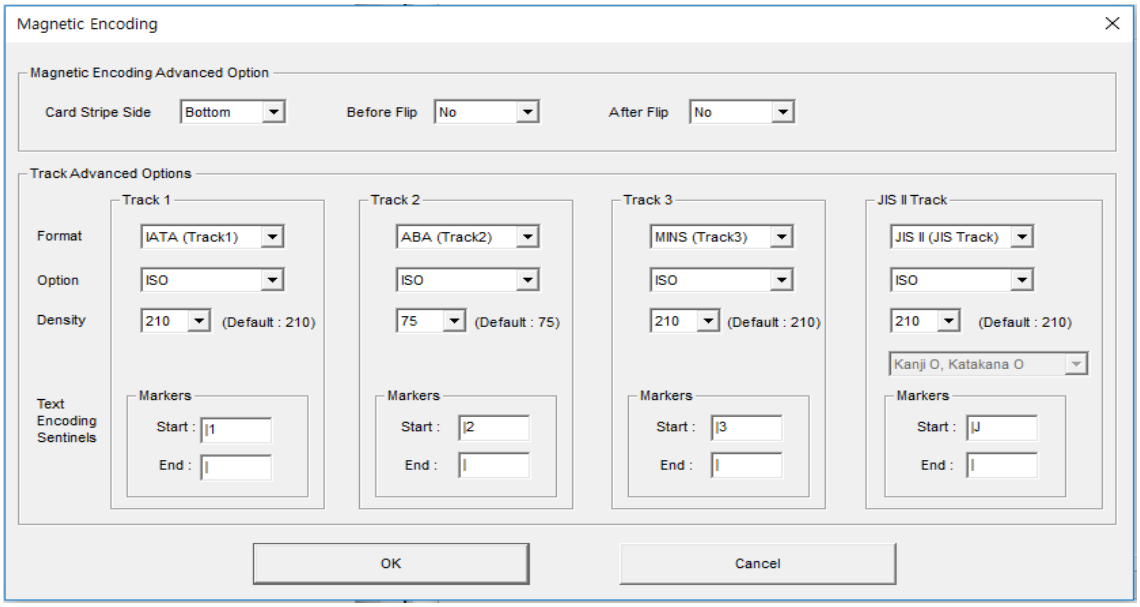



Figure 45 Encoding Advanced options

This Pop-up will be displayed when clicking 'Advanced Encoding Option' button.

**Card Stripe Side :** The location of magnetic stripe [Bottom / Top]

**Before Flip :** Do flipping a card before encoding [No / Yes]

**After Flip :** Do flipping a card after encoding [No / Yes]

**Track Advanced Options :**

**Format :** Encoding format (IATA, ABA, MINS, JISII, Bits Mode)

**Track 1 :** (Default) IATA

**Track 2 :** (Default) ABA

**Track 3 :** (Default) MINS

**JIS II Track :** (Default) JIS II

**Density :** Magnetic encoding density (210, 75)

The default for track 2 is 75, the rest are all 210.

**Text Encoding Sentinels:** You can set the Start, End, Marker for magnetic encoding to match your existing system or templates.

**Start :** Start Marker

**End :** End Marker

## 7. Load/Save

**Load Driver Setting :** Load the saved driver configuration file.

**Save Driver Setting :** Save the current driver configuration to the file

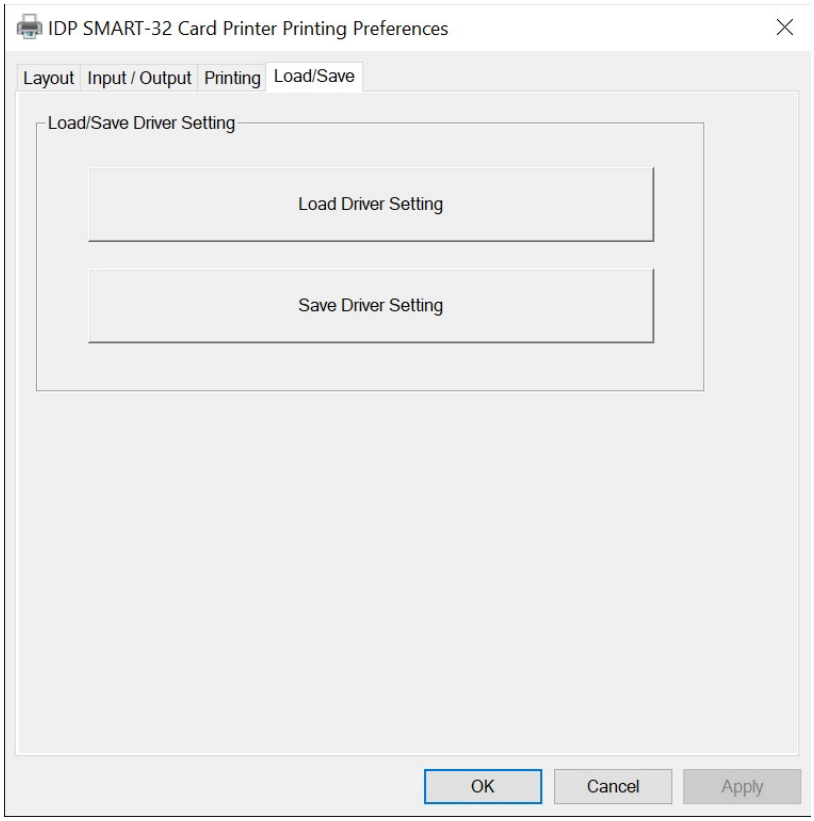



Figure 46 Load/Save

## 3.2. Advanced Options

To change the detailed configuration located in the 'Layout' tab displayed, please click "Advanced…" button on the bottom of the 'Layout' tab of the 'Preferences'.

- **Print Quality :** You can select the resolution of printing (DPI).
  - **300 x 300 dpi :** It applies to Color & K(Mono) panels.
  - **300 x 600 dpi :** It applies to K(Mono) panel only. Color; 300x300 dpi.
  - **300 x 1200 dpi :** It applies to K(Mono) panel only. Color; 300x300 dpi.

  Default is 300 x 300 dpi.

- **Reset Default Values** : Reset to default.

- **Color Correction** : You can adjust color intensity using gamma settings. The higher the value, the darker the print. You will need to use SMART Utility to adjust color densities

  **Main [-100 ~ 100] :** correct gamma for all ribbon 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 Resin panel.
  **Overlay [-100 ~ 100] :** correct gamma for Overlay panel.

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

  **Dot [0 ~ 100]** : Set density criteria for extracting black dots.
  **Threshold [0 ~ 100]** : Set density criteria when Threshold dithering is selected.
  **Dithering Degree [0 ~ 100]** : Set sharpness when Random dithering is selected.
  **Resin Extraction** : You can set which method to extract resin black when you use design programs. It will be set automatically.
  - **Black object** : Extract resin black for black text, line, circle, binary images, etc.
  - **Black Text** : Extract resin black for black text only
  - **Black Dots** : Extract resin black for all of black dots (YMCK panels are used.)
  - **Black Dots Only** : Extract resin black for all of black dots (K panel is used only.) This is a relevant option for Barcode and QRCode image printing.
  - **Not Use** : Not to extract resin black

- **Extra Control**: Other options

  **Rewritable Erase Density [0 ~ 100]** : Set Erase Density on Rewritable printer.

- **Wait Option** : Turning on this option offers options to hold a card specified amount of time in each location when encoding to a smart card without using the SDK. If not using the SDK, only wait for the specified amount of time, so you must make a program that recognizes and encodes smart cards within the specified amount of time.

  **Wait at Contactless Encoding Position [On/Off] :** Set whether to wait at the RF encoder position or not.

  **Card Side [Front/Back]** : Set the direction to card when waiting.

  **Wait Position [-100 ~ 100]** : Set the position of card to wait from the criteria position. Unit is 0.1mm.

  **Wait Time [0 ~ 1000]** : Set time to wait. Unit is 1 second.

  **Wait at Contact Encoding Position [On/Off] :** Set whether to wait at the IC encoder position or not.

  **Card Side [Front/Back]** : Set the direction to card when waiting.

  **Wait Position [-100 ~ 100]** : Set the position of card to wait from the criteria position. Unit is 0.1mm.

  **Wait Time [0 ~ 1000]** : Set time to wait. Unit is 1 second.

## 3.3. Other settings

### 1. Sharing tab

You can share a printer with the Sharing tab via Network. Please consult your Network Administrator for more details regarding your network settings. Default is unchecked “Share this printer”.

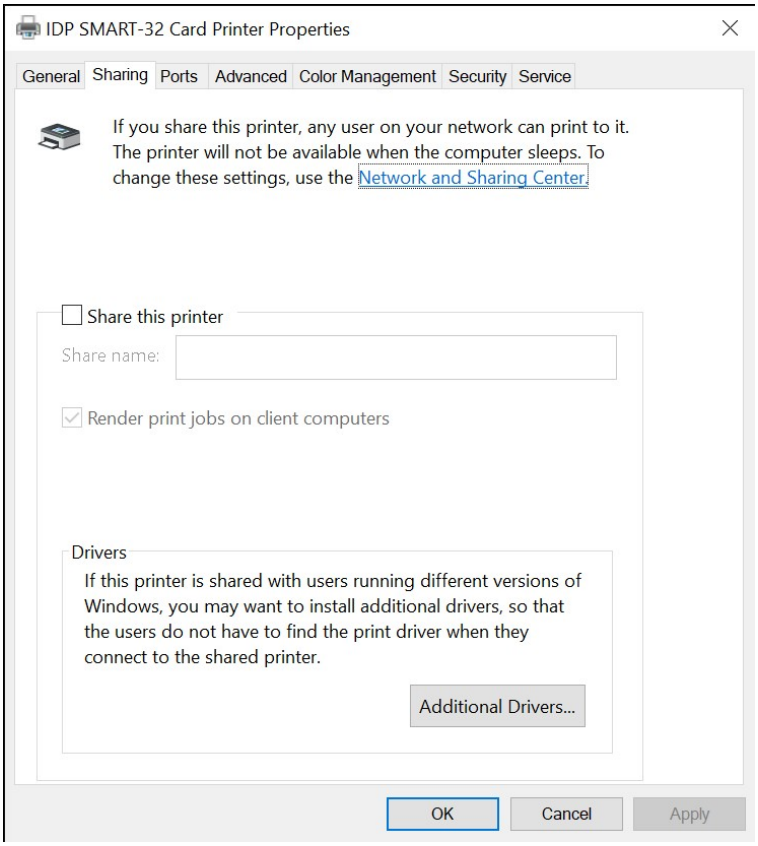



Figure 47 Sharing tab

## 2. Ports tab

Port tab shows which port is connected with SMART-32.

In case of USB connection, The “USB0xx” port is connected as picture below.

In case of network connection, Network port (Standard TCP/IP Port) address is automatically selected by your network (DHCP) or predefined (Static IP). Check with your Network Administrator before making any changes.

**This port is selected automatically by Windows. It is recommended to keep default setting.**

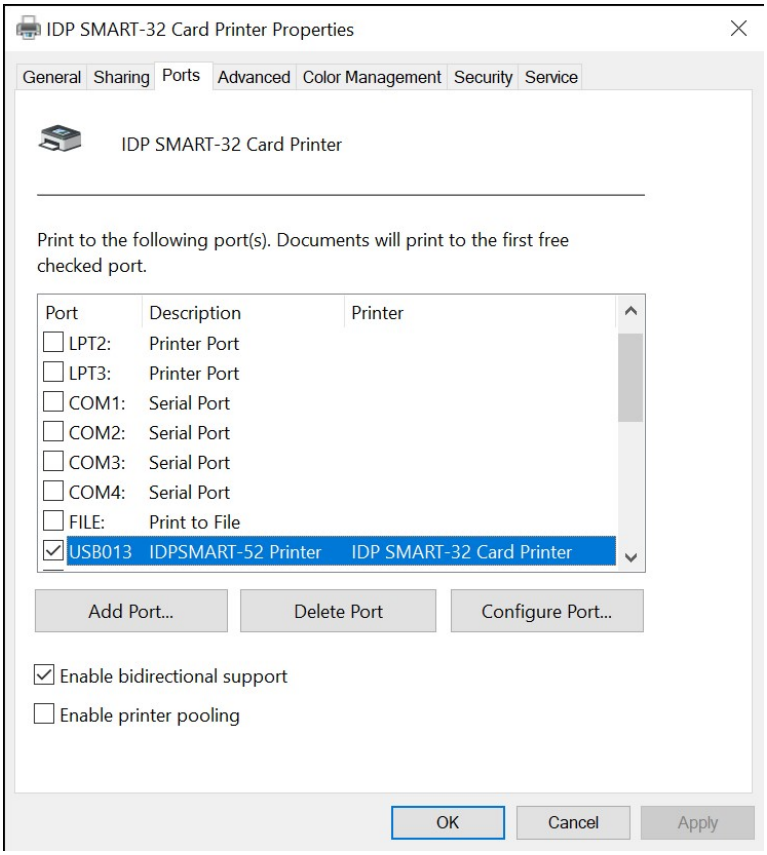



Figure 48 Ports tab

## 3. Advanced tab

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 keep default setting.)

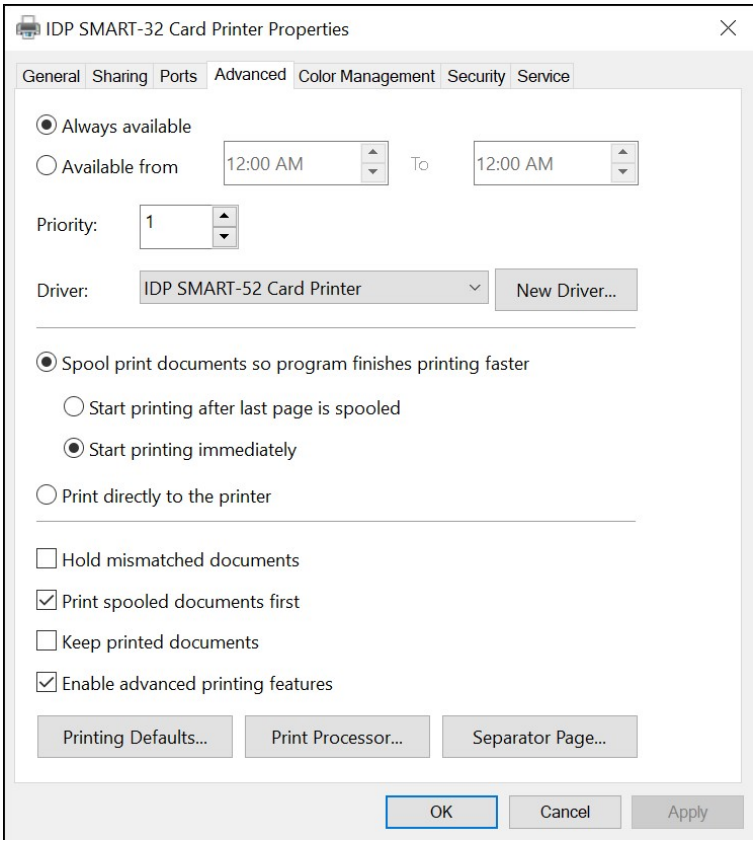



Figure 49 Advanced tab

## 4. Color Management tab

You can select color management profile fit to the printer.

SMART-32 uses color profile to express optimal color. The driver selects color profile automatically to fit each ribbon.

(It is recommended to keep default setting.)

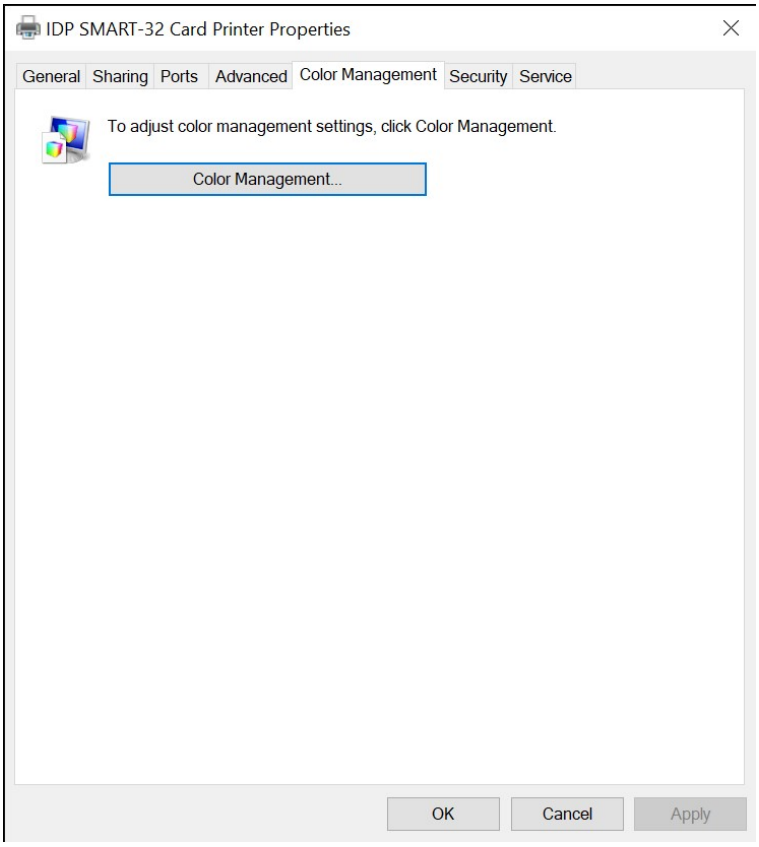



Figure 50 Color Management tab

## 5. Security tab

You can set the permission to use a printer. Depending on the permission, the certain group or user can print, manage the printer/documents or not. Contact your IT Administrator for more information.

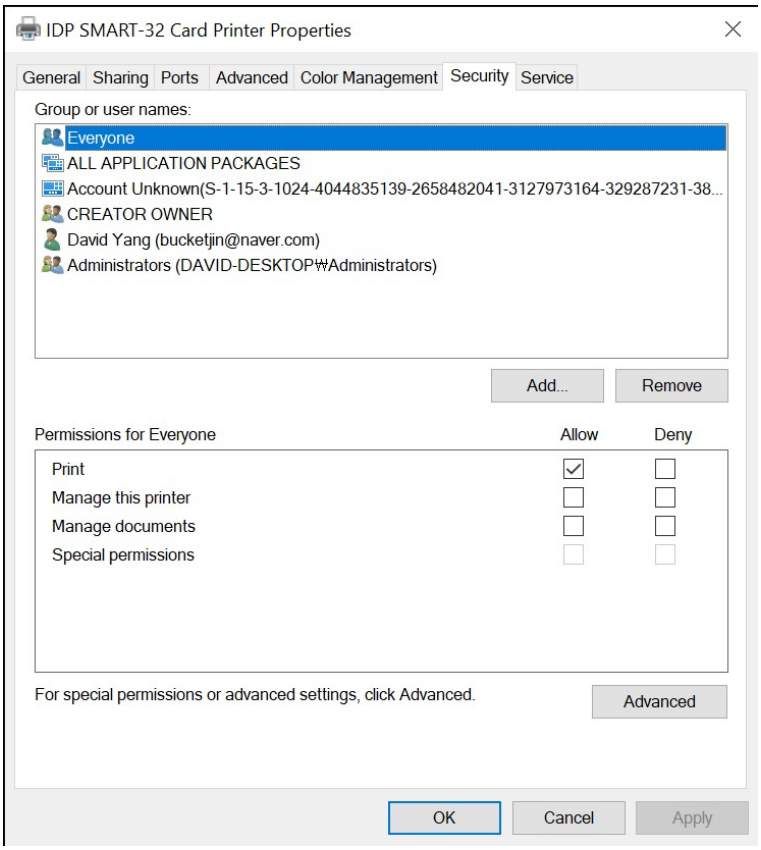



Figure 51 Security tab

## 6. Service tab

It displays the printer and installed options to connect, printer serial number, printer ID, driver version, firmware version, type of ribbon & balance, and printer's status.

**Click the "Print Technical Support Sheet"** button to get the card to check the printer's setup values.

**Click the "Clean Printer"** button to run the "Clean Printer" utility. For further details, please refer to "5.1. Cleaning Printer".

**Click the "Config Printer"** button to run the utility to change the printer settings. For further details, please refer to "4.6 PRINTER CONFIG.

**Click the "Upgrade Firmware"** button to run the utility to upgrade the firmware. For further details, please refer to "4.8 FIRMWARE UPDATE".

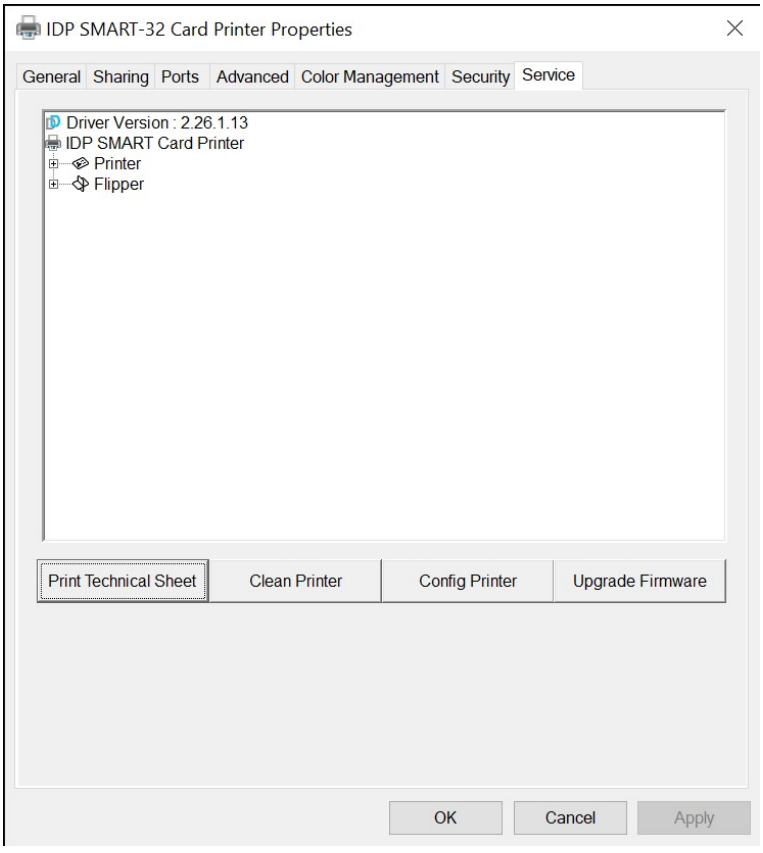



Figure 52 Service tab

# 4. SMART Utility

SMART-32 is produced with optimized settings. You need to adjust the setting value if required or spare parts are replaced using the SMART utility. It contains features of adjustment of printer settings, network settings, upgrade of firmware upgrading, and Etc.
Please go to IDP website (www.idp-corp.com) and search for “SMART utility” in the “Support” - “Download” menu. After that, download the “SMART Utility”.

## 4.1. Install SMART Utility - Windows version

### 1. Extract the downloaded file

Extract the downloaded file and run the “SMART_Utility.exe” in the “SMART_Utility” folder.

### 2. User Account Control

‘If the “User Account Control” pop-up window opens, Click “Yes”.

**※ Depending on your computer’s settings, you may be prompted to supply local admin credentials to authorize the installation of the driver.**

### 3. Utility Installation Step 1

Select the language from the default English to another language you want, click “OK”.

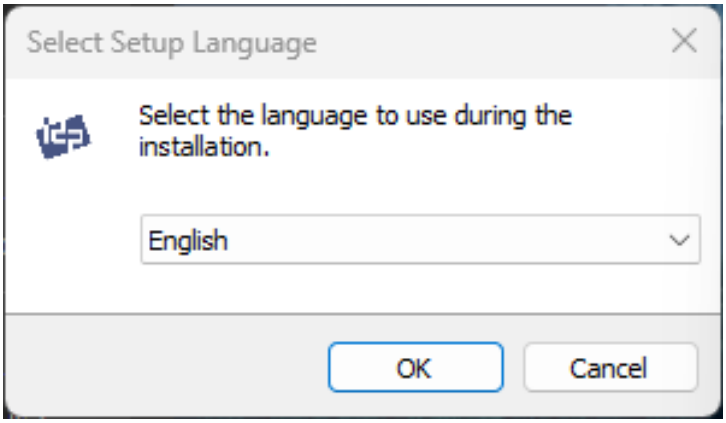



Figure 53 Install SMART utility 1 – Windows version

## 4. Utility Installation Step 2

Select the folder to be installed and click “Next” button.

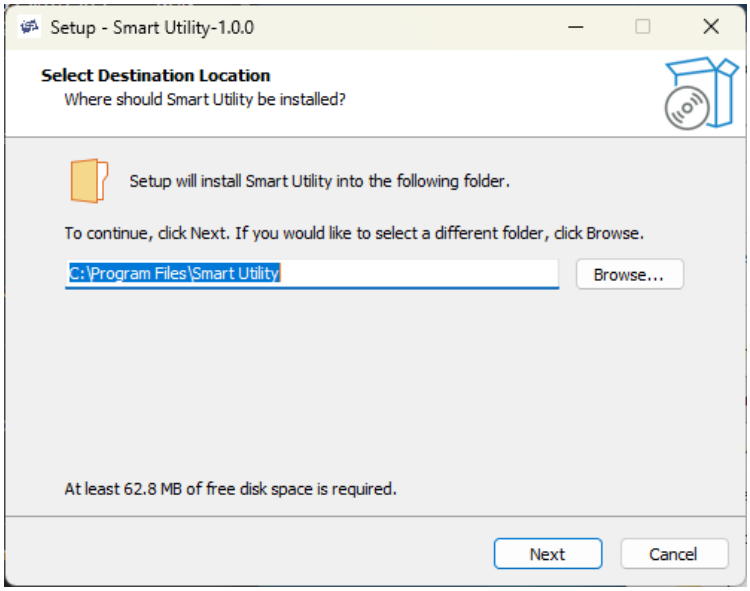



Figure 54 Install SMART Utility 2 – Windows version

## 5. Utility Installation Step 3

Select Start Menu folder and click ‘Next’ button. If you want to select a different folder, click ‘Browse...’ button and designate the folder manually.

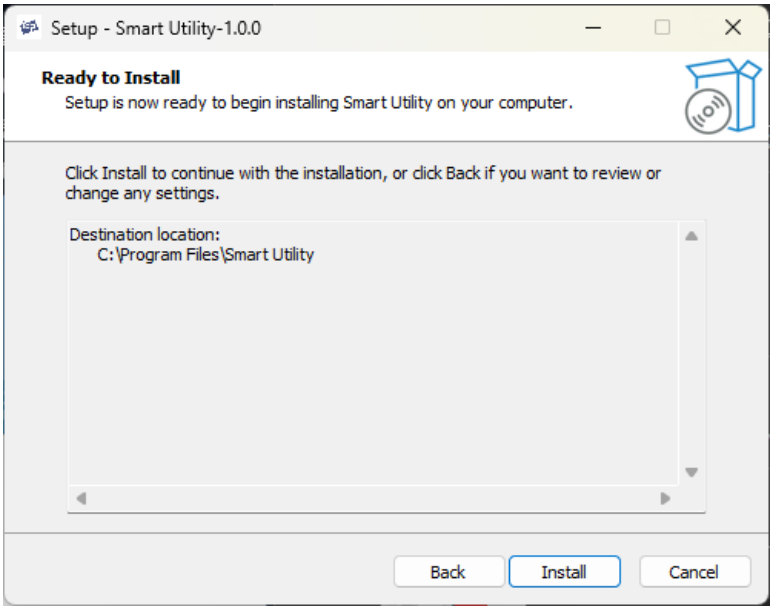



Figure 55 Install SMART Utility 3 – Windows version

## 6. Utility Installation Step 4

Select to create the additional shortcut on the desktop, and click “Next” button.

Confirm the selections and click ‘Install’ button.

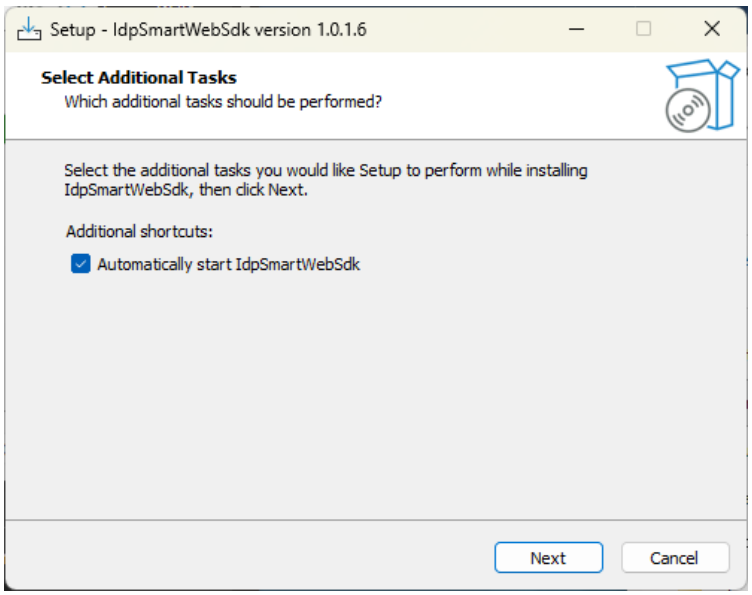



Figure 56 SMART Installation SMART Utility 4 – Windows version

## 7. Utility Installation Step 5

After installing of SMART Utility, the installation of SmartAgent plugin program that supports the operation of utility will progress.

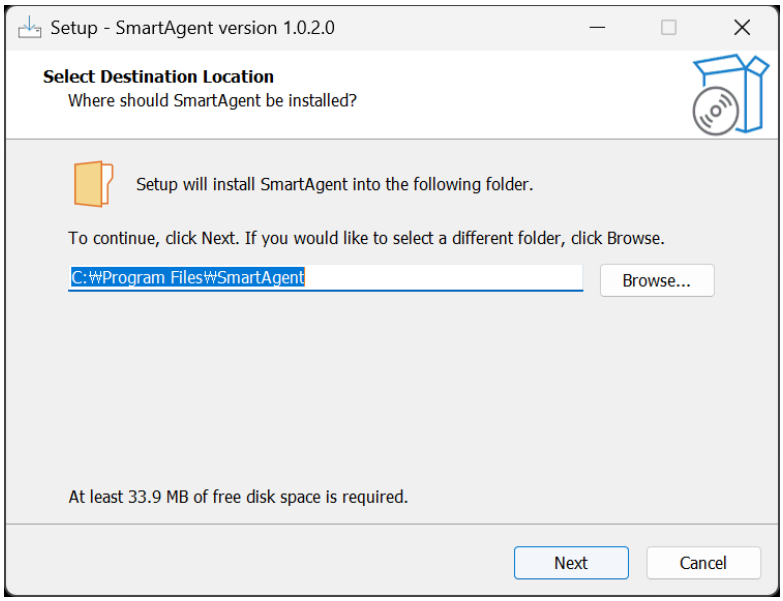



Figure 57 SMART Install SMART Utility 5 – Windows version

## 8. Utility Installation Step 6

After Selecting the folder to install and the Start Menu, and selecting whether to install the shortcut, the SMART utility installation is complete.

**※ PC reboot is recommended for normal operation.**

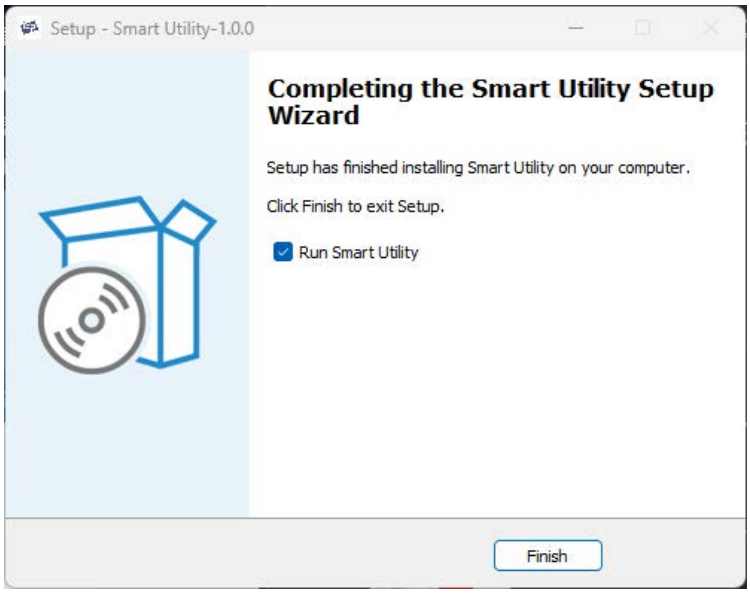



Figure 58 Install SMART Utility 6 – Windows version

# 4.2. Install SMART Utility – Linux version

## 1. Extract the downloaded file

Extract the downloaded file by “tar-xzvf” command.

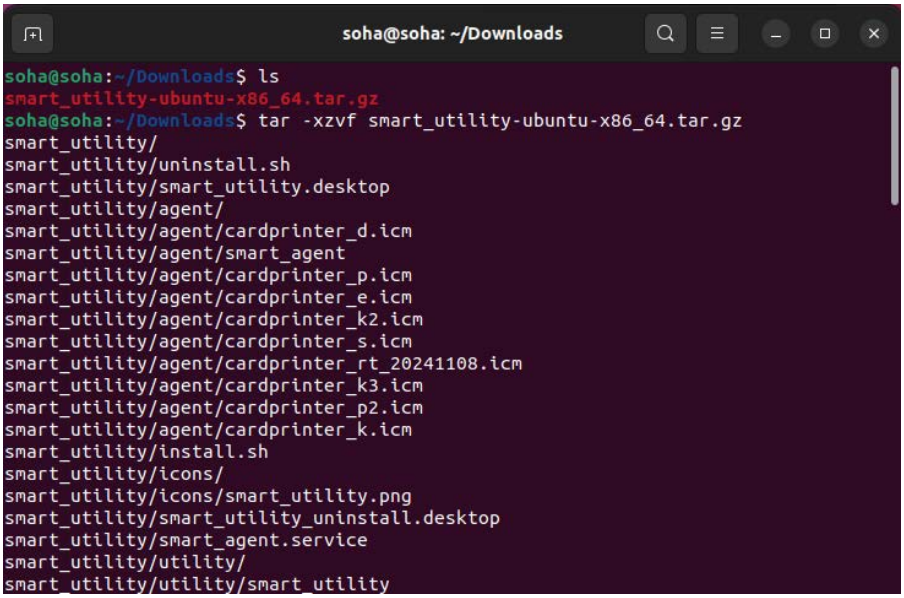



Figure 59 SMART Install SMART Utility 1 – Linux version

## 2. Utility Installation Step 1

“Go to “SMART_Utility” directory. Run the “.sh” file to input ‘**sudo ./install.sh**’.

※ In case of kylin OS, input ‘**sudo bash ./install.sh**’ instead.

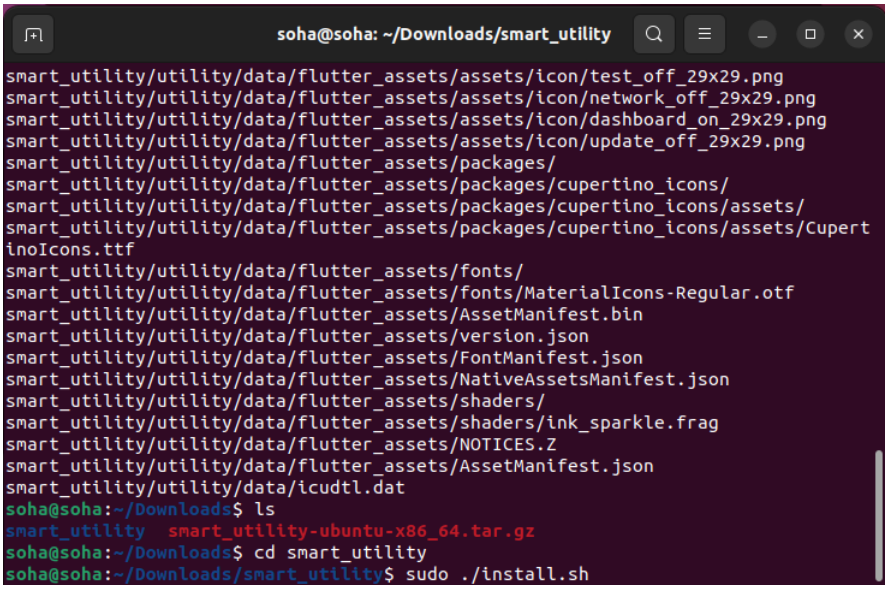



Figure 60 Install SMART Utility 2 – Linux version

## 3. Utility Installation Step 2

Check the Installation completion message and how to configure the Port.

**※ Check how to uninstall the utility by the path of “uninstall.sh” for future.**

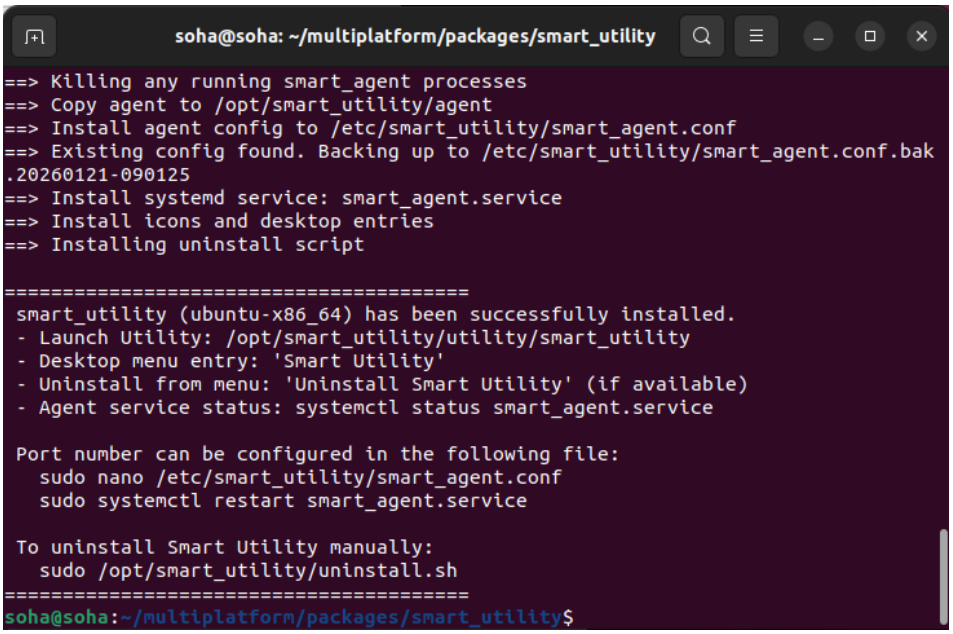



Figure 61 SMART Install SMART Utility 3 – Linux version

## 4. Utility Installation Step 3

Go to Application Menu and you can see the “SMART Utility” icon.

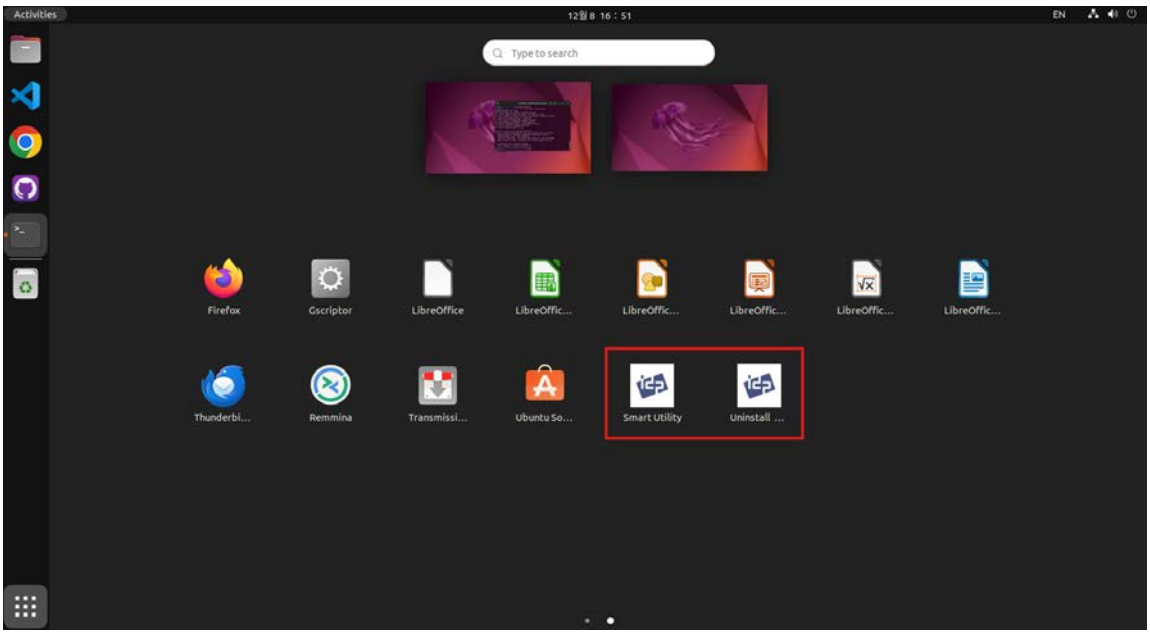



Figure 62 Install SMART Utility 4 – Linux version

## 4.3. Menu composition

It provides features of printer settings, network settings, printing test, and firmware upgrade.

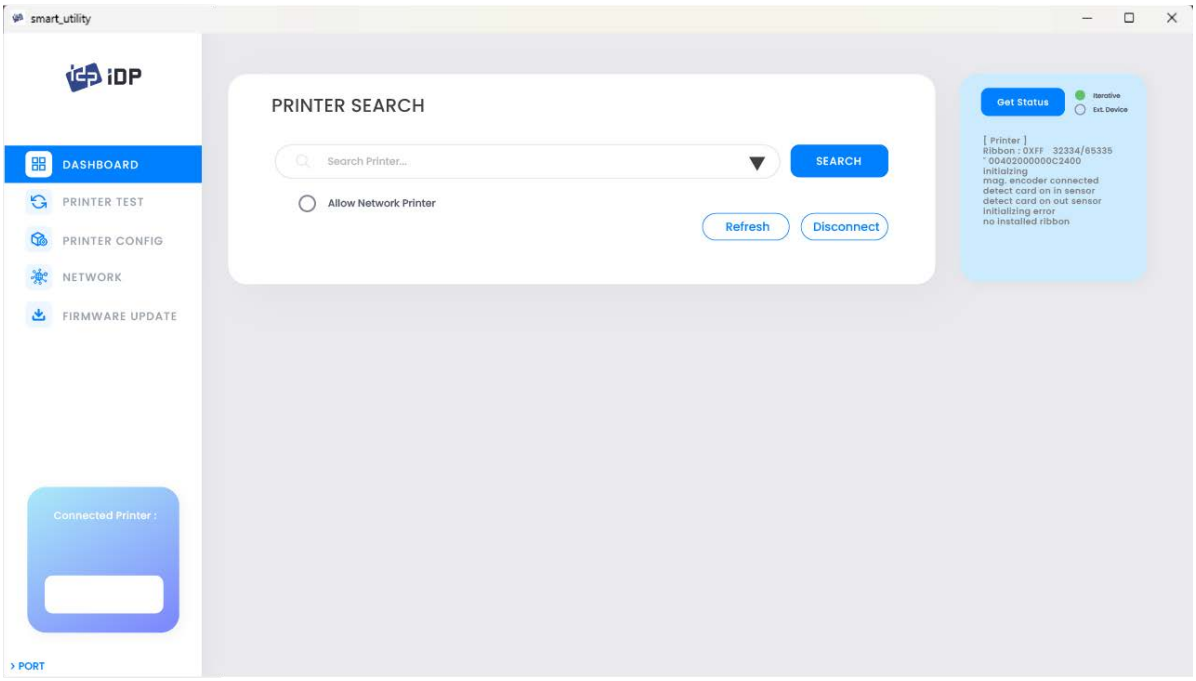



Figure 63 SMART Utility

① **DASHBOARD**

It displays the information and status of the connection for the printer and other options, status of consumables.

② **PRINTER TEST**

You can test for printing, encodings, and other operations.

③ **PRINTER CONFIG**

You can adjust the printer settings, such as area of the printing, densities, printer ID, TPH SN and its resistor, for the advanced users.

④ **NETWORK**

You can adjust the settings for connecting to and using a printer over a network.

⑤ **FIRMWARE UPDATE**

It can upgrade the firmware for printer and installed options.

# 4.4. DASHBOARD

## 1. Run SMART Utility

Run the SMART Utility and connect the printer.

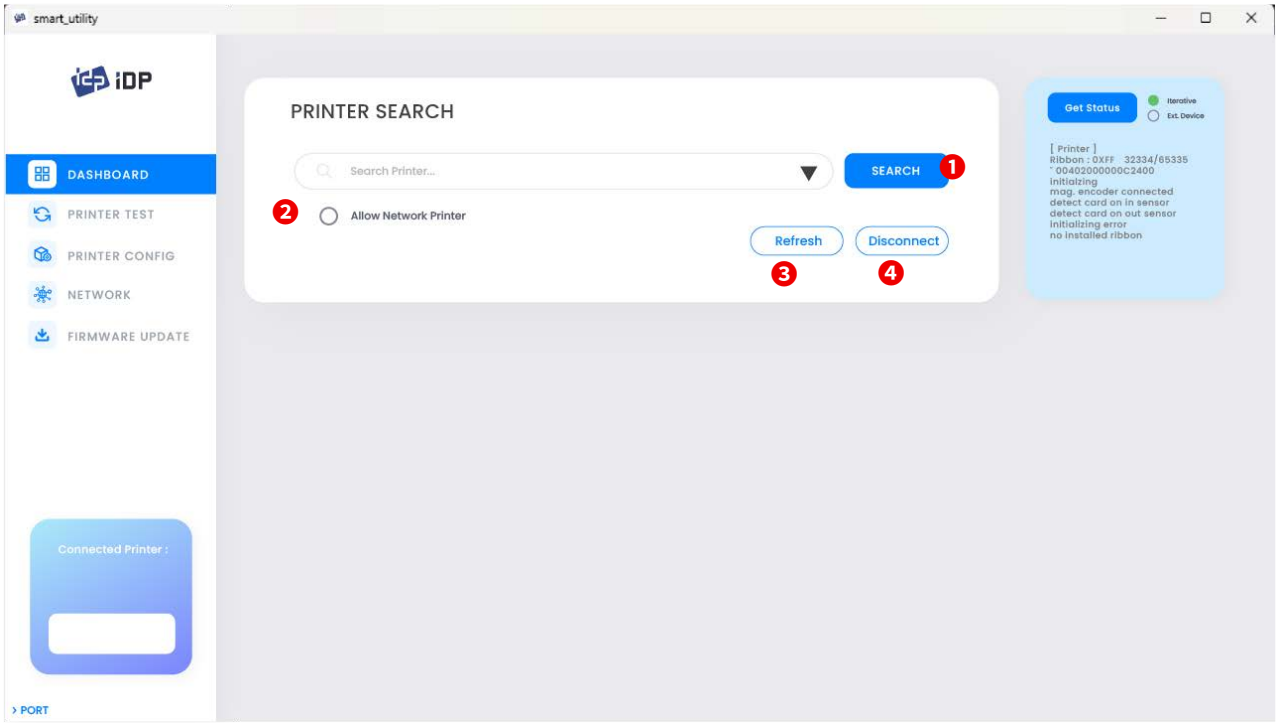



Figure 64 Connect printer

In case of USB connection to printer, click ❶ **SEARCH** button and the USB-connected printers are displayed.
In case of network connection to printer, check ❷ **Allow Network Printer** radio button, and click ❶ **SEARCH** button. Then, the network and USB-connected printers are displayed. Select the printer that you want to connect.

If the printer that you want to connect is not displayed in the list, click ❸ **Refresh** button to search the connected printer again.

Click ❹ **Disconnect** button to disconnect from the connected printer.

## 2. DASHBOARD

When the printer is connected properly, various information about the printer is displayed on the DASHBOARD as follows.

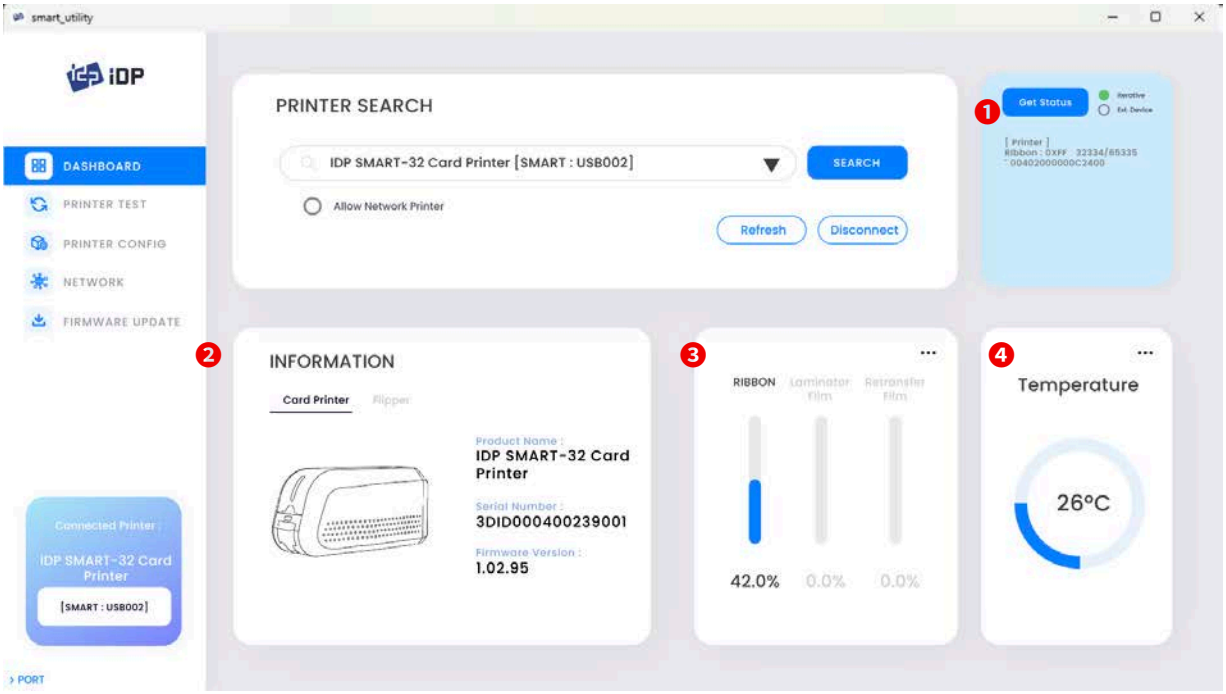



Figure 65 Connect Printer

① **The status log for the printer and other options**

**Iterative:** Automatically and periodically updates the status of the printer

**Ext. Device:** The status of other options such as Flipper, Laminator, Multi Hopper, Etc.

② **INFORMATION**

Basic information for the printer and other options

The Flipper or Laminator tab is displayed if it is installed.

③ **CONSUMABLES**

It displays the balance of installed Ribbon, Laminator Flim, or Retransfer Flim

"…": The details for each consumable.

The information displayed may differ depending on the model type.

④ **TEMPERATURE**

Temperature of the printer system.

# 4.5. PRINTER TEST

## 1. Menu Composition

PRINTER TEST provides the function tests as follows.

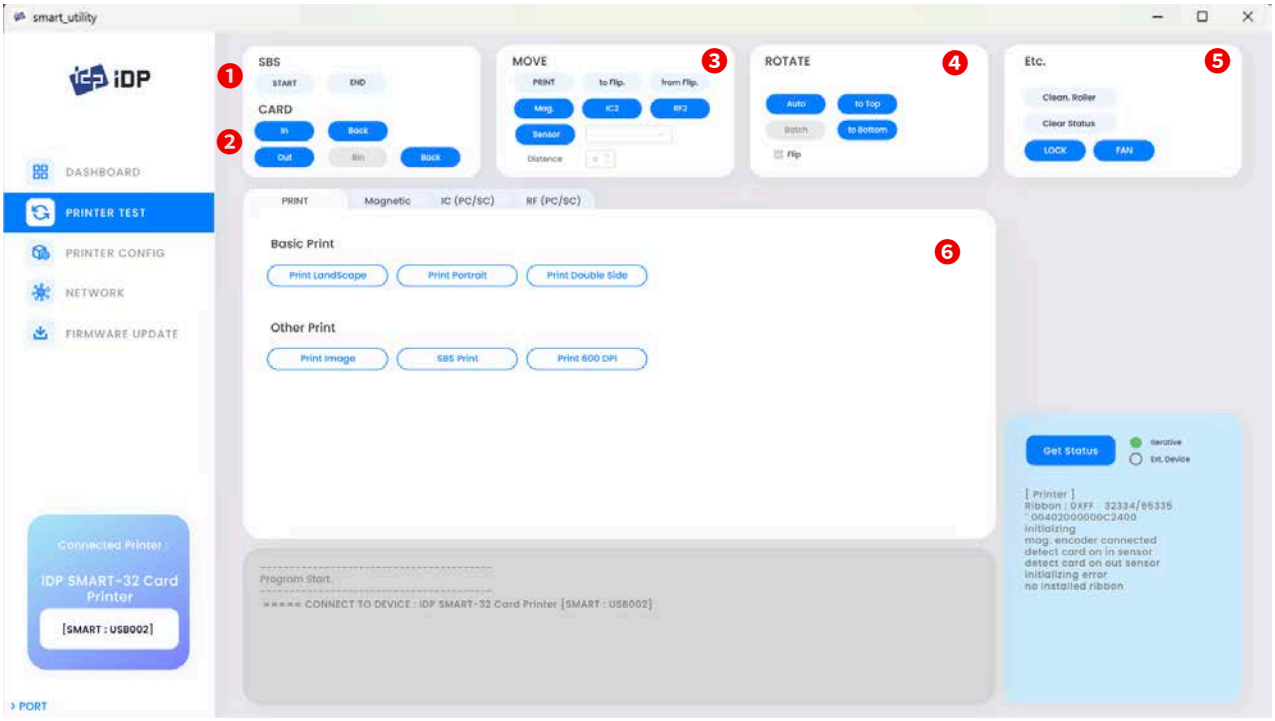



그림 66 PRINTER TEST 메뉴

① **SBS**

SBS is to operate SMART-32 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 “SBS Print”. 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 “END”.

② **CARD**

CARD is to insert a card into printer and eject a card. “In” is to move a card from the Input Hopper to the printer and “Out” is to move a card from printer to Output Hopper. In case the flipper or rear stacker is installed, “ Back” ejects a card to the rear side.

**③ MOVE**

Move is to move a card to a specific position inside the printer. “Print” is to move a card to the printing position, “Mag.” is to the magnetic encoding position, “IC2” is to the contact smartcard encoding position, and “RF2” is to the contactless smartcard encoding position. “To Flip.” is to move a card from the printer to the flipper, and “From Flip.” is to move a card from the flipper to the printer. “Sensor” is to move a card from the selected sensor to where you input a ‘Distance’ value.

**④ ROTATE**

ROTATE is to flip over a card in the installed flipper. “Auto” is to move a card from the printer to the flipper, 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 sets. “To Bottom” is to turn to the back side of the card, and “To Top” is to turn to the front side of the card.

**⑤ Etc.**

“Cleaning Roller” is to clean the roller using the Long Cleaning Card automatically. “Clear Status” is to remove the status in the message space. “LOCK” is to lock the printer with a preset password in the PRINTER CONFIG menu. “FAN” is to operate the fan on the Top Cover.

**⑥ PRINT, Magnetic, IC (PC/SC), and RF(PC/SC) tab**

Print test and, if the encoder is installed, an encoding test can be performed, too.
The Magnetic, IC, and RF tabs are displayed when the target encoder is installed.

## 2. Printing Test

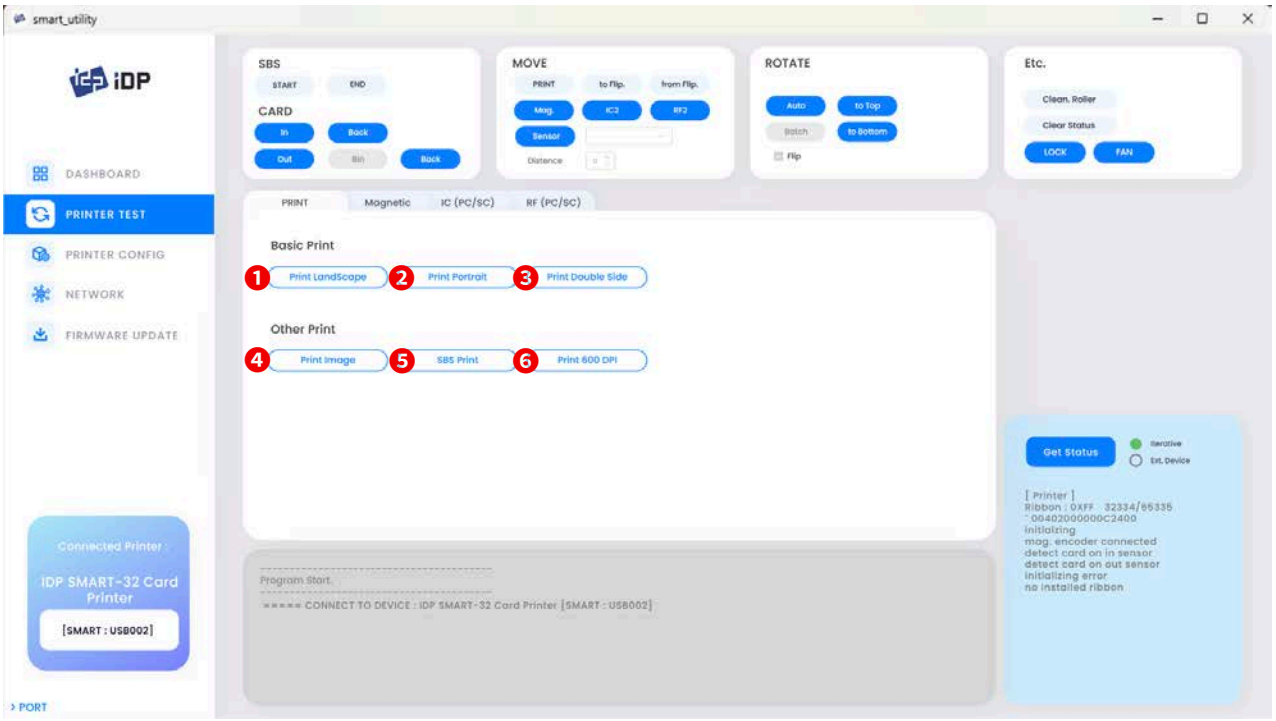



Figure 67 Printer Test

① **Print Landscape**

To print a predesigned Landscape format.

② **Print Portrait**

To print a predesigned Portrait format.

③ **Print Double Side**

To print a predesigned double-sided landscape format.

④ **Print Image**

To open the browser to select the image file and print it.

⑤ **SBS Print**

To print in SBS mode.

⑥ **Print 600 DPI**

To print a predesigned 600 DPI resolution format.

※ **This button is only activated on SMART-81H model.**

## 3. Encoding Test

### Magnetic : Magnetic stripe encoding

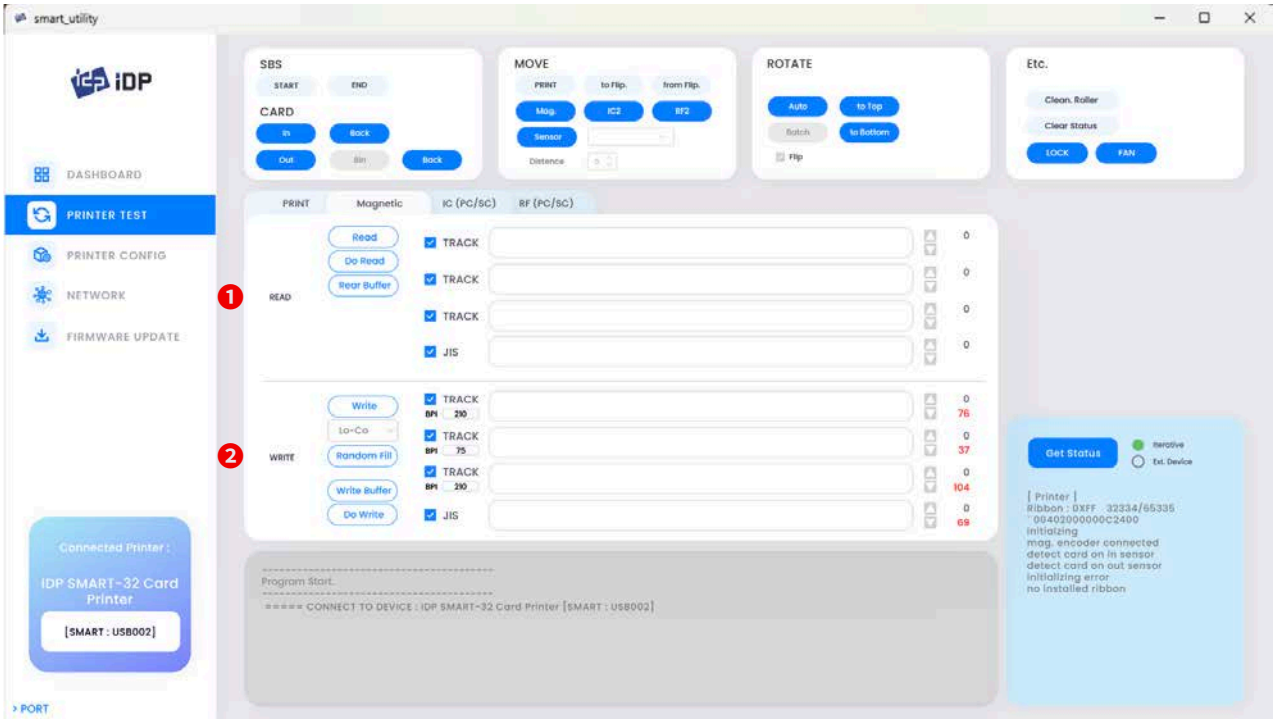



Figure 68 Magnetic stripe Encoding

① **READ section**

**"Read"** is to read and display the data from the magnetic stripe card. It is composed of "Do Read" and "Read Buffer" and runs "Do Read" and "Read All Buffer" sequentially.

**"Do Read"** is to read the data from the magnetic stripe card and store the data in the buffer.

**"Read Buffer"** is to transmit the data stored in the buffer to the PC. If the track number is checked, the data of the checked track is only transmitted to the PC.

② **WRITE section**

**"Write"** is to write the data to the magnetic stripe. It is composed of "Write Buffer" and "Do Write" and runs "Write Buffer" and "Do Write" sequentially. It can be set to the magnetic card type corresponding to a magnetic card (HiCo / LoCo) to use, and, if the track number is checked, the data of the checked track is only written.

**"Random Fill"** is to create random magnetic encoding data for testing.

**"Write 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 the card.

## IC(PC/SC) : Contact Smart Card Encoding

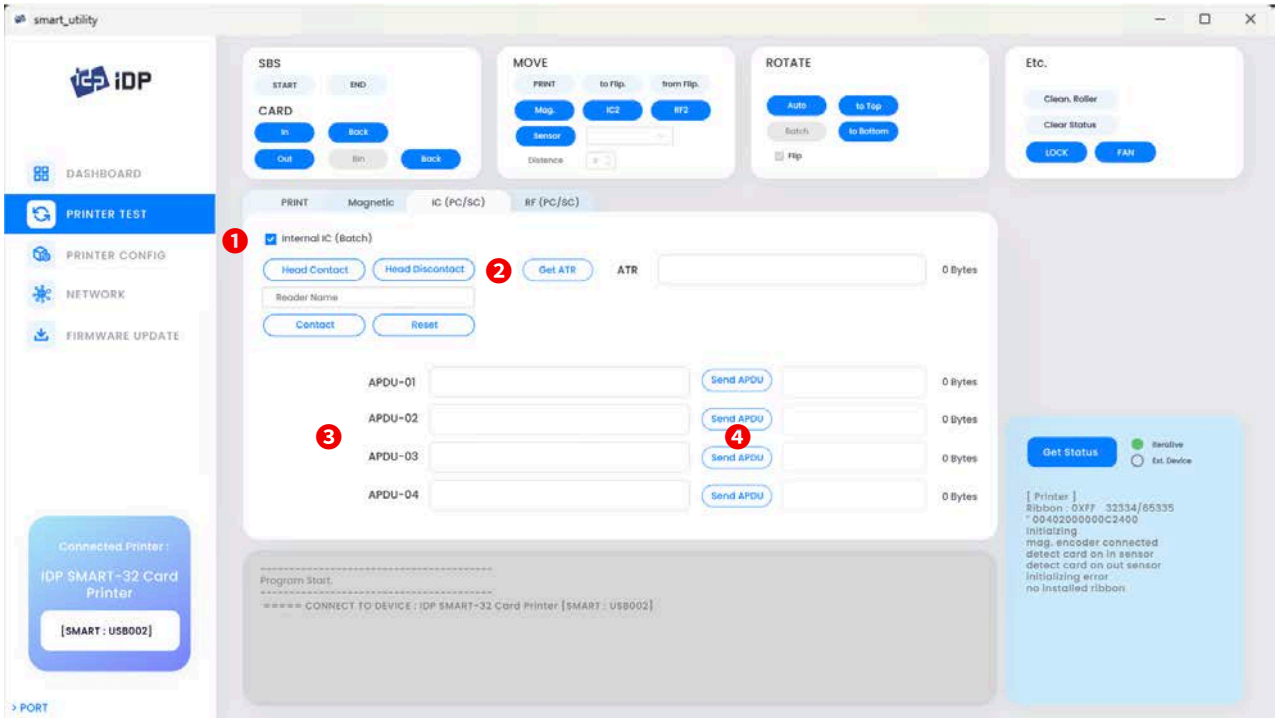



Figure 69 IC(PC/SC) Encoding

① **"Internal IC"** is checked if the internally installed contact smart card encoder is used. If an externally installed encoder is used, uncheck this item.

**"Head Contact"** is to contact the IC chip of the smart card by lowering the encoder head pins physically.

**"Head Discontact"** is to separate the encoder head pins from the IC chip of the smart card by lifting the head physically.

**“Contact”** is to initialize the encoder and get the name of the encoder.
**“Reset”** is to turn off the encoder and finish the function electrically.

② **“Get ATR”** is to read the ATR value on “Contact” status.

③ **“APDU-01 ~ 04”** is to input the APDU value to transmit to the contact smart card.

**“Send APDU”** is to send the APDU commands to operate the contact smart card. The received result is displayed on the right side of each button.

## RF(PC/SC) : Contactless Smart Card Encoding

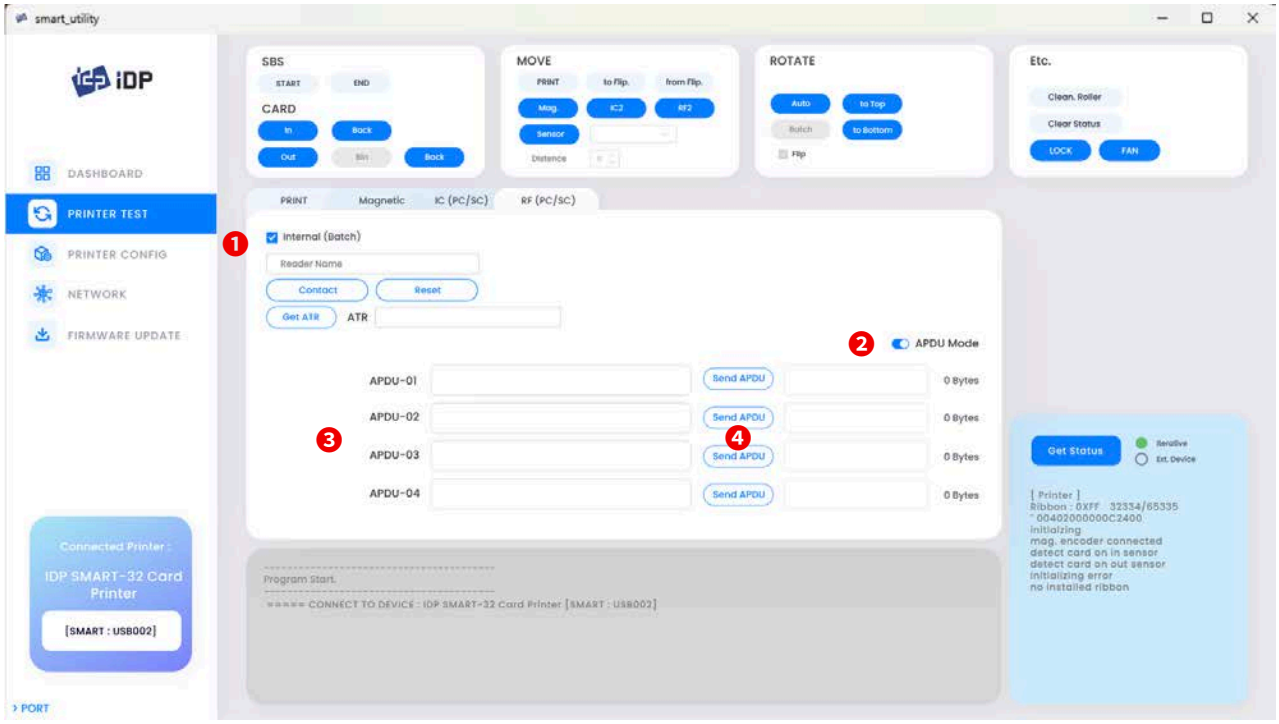



Figure 70 RF(PC/SC) Encoding – APDU Mode On

① **“Internal”** is checked if the internally installed contactless smart card encoder is used. If an externally installed encoder is used, uncheck this item.
**“Contact”** is to initialize the encoder and get the name of the encoder.
**“Reset”** is to turn off the encoder and finish the function electrically.
**“Get ATR”** is to read the ATR value on “Contact” status.

② **“APDU Mode” On**/Off

③ **“APDU-01 ~ 04”** is to input the APDU value to transmit to the contactless smart card.

**“Send APDU”** is to send the APDU commands to operate the contactless smart card. The received result is displayed on the right side of each button.

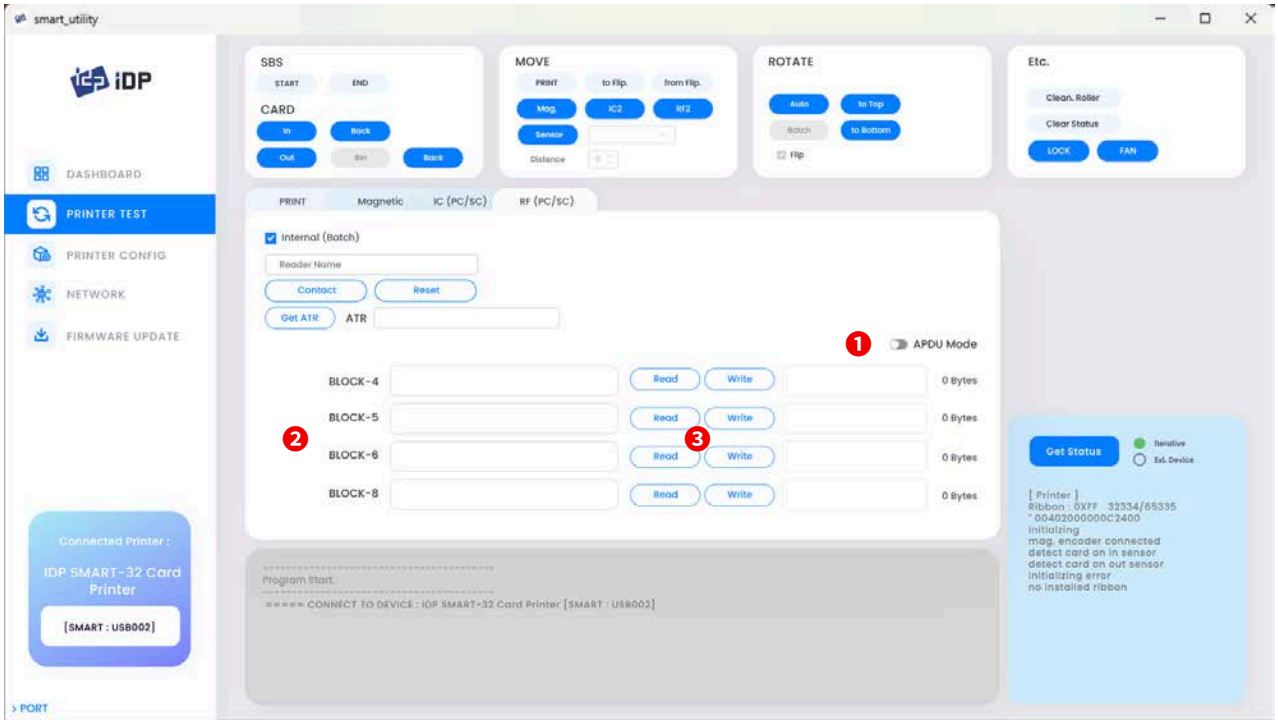



Figure 71 RF(PC/SC) Encoding – APDU Mode Off

① **“APDU Mode”** On/**Off**

② **“BLOCK-4 ~ 8”** is to input the string to send to the contactless smart card.

③ **“Read”** is to read the values in the “Block-4 ~ 8” of the contactless smart card.
**“Write”** is to write the string in the “Block-4 ~ 8” into the contactless smart card.

# 4.6. PRINTER CONFIG

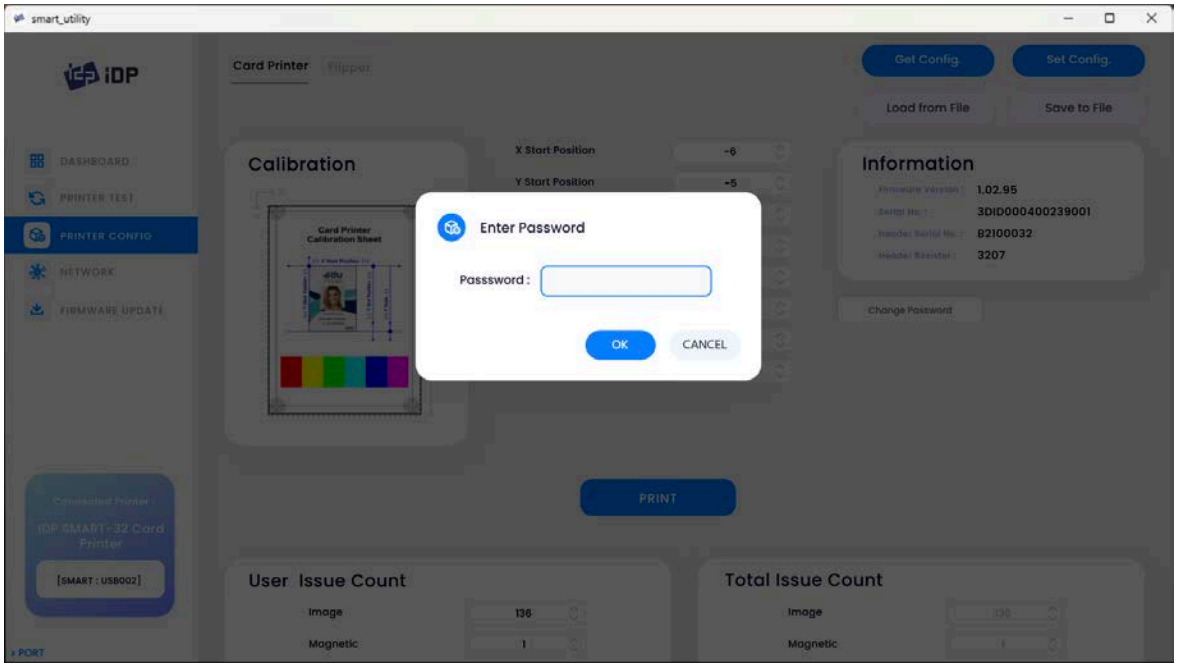



Figure 72 Run PRINTER CONFIG

## 4. Run PRINTER CONFIG

PRINTER CONFIG menu requires a password, so the Enter PASSWORD pop-up is displayed.

This password is saved to SMART printer, so even if you use a different PC, the same password is needed to run PRINTER CONFIG for the same printer.

Please contact the Local reseller if you forget the password

**There is no default password, so simply click “OK” button.**
**This password is different from the one used in the “NETWORK” menu.**

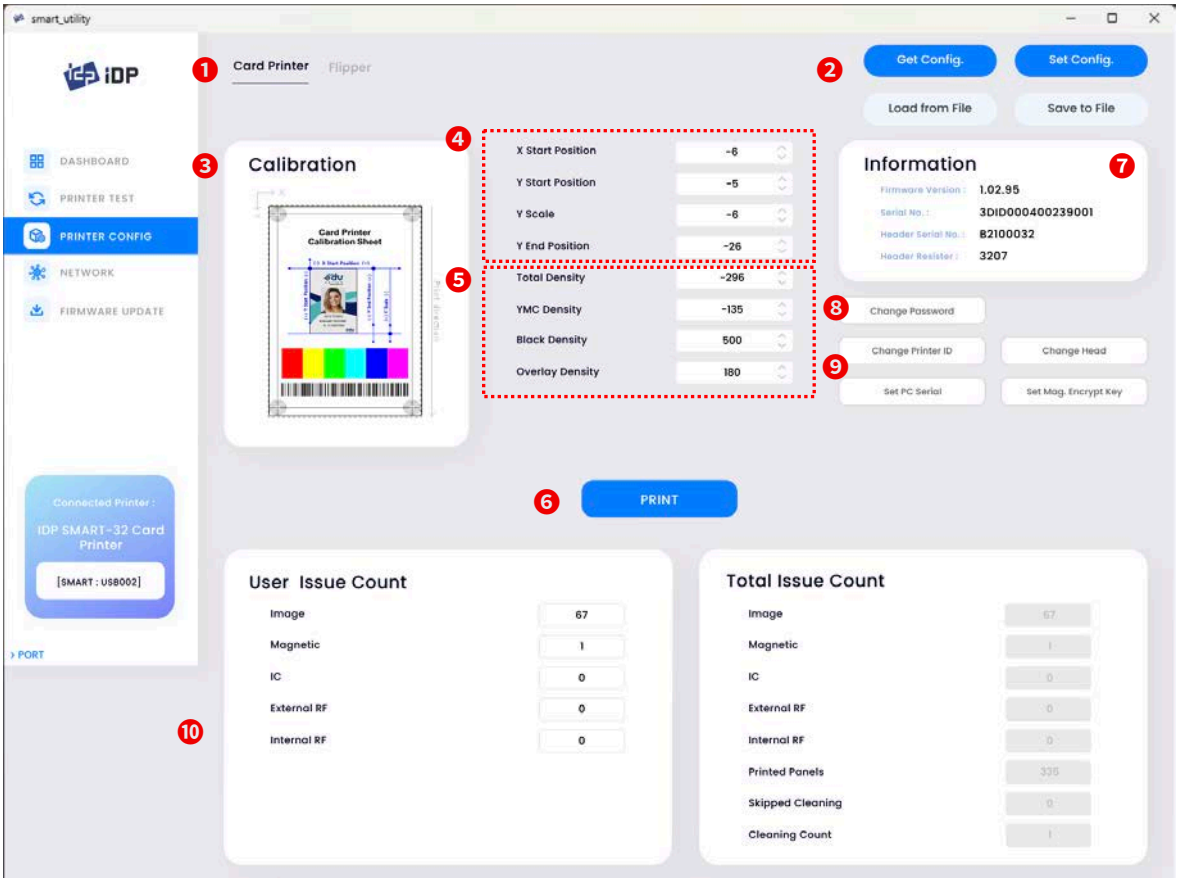



Figure 73 PRINTER CONFIG

## 2. Menu Composition

PRINTER CONFIG provides the features as follows.

① **Configuration of the Printer and other modules**

PRINTER CONFIG menu is composed of 3 tabs. Card Printer, Flipper, and Laminator tab.

※ “Flipper” or “Laminator” tab is displayed if it is installed.

② **Save and Load the configuration**

**Get Config. :** Load the configuration from the printer

**Set Config. :** Save the changed configuration to the printer

**Load from File :** Load the configuration from saved configuration file

**Save to File :** Save the configuration as the configuration file

③ **Preview for the changed print area**

It displays the position of the print area, reflecting the changed position value. This preview provides an easy-to-understand view of how the position will change after changing the position values from the previously saved position.

④ **Adjust the print area**

Use these settings to adjust the image position on the card. Set values so that all circles at the corners are printed normally, and blank spaces are about 0.5mm on the top and bottom of the card. Click the **"PRINT"** button to print a test card. Adjust the settings in following order as needed and print again to check the results.

**X Start Position :** Set the right and left position by adjusting value
**Y Start Position :** Set the top position by adjusting value and make a margin of 0.5 mm
**Y End Position :** Set the bottom position by adjusting value and make a margin of 0.5 mm. It is recommended to set bigger value for "Y Scale" than default
**Y Scale :** Set it to print circles at the bottom normally

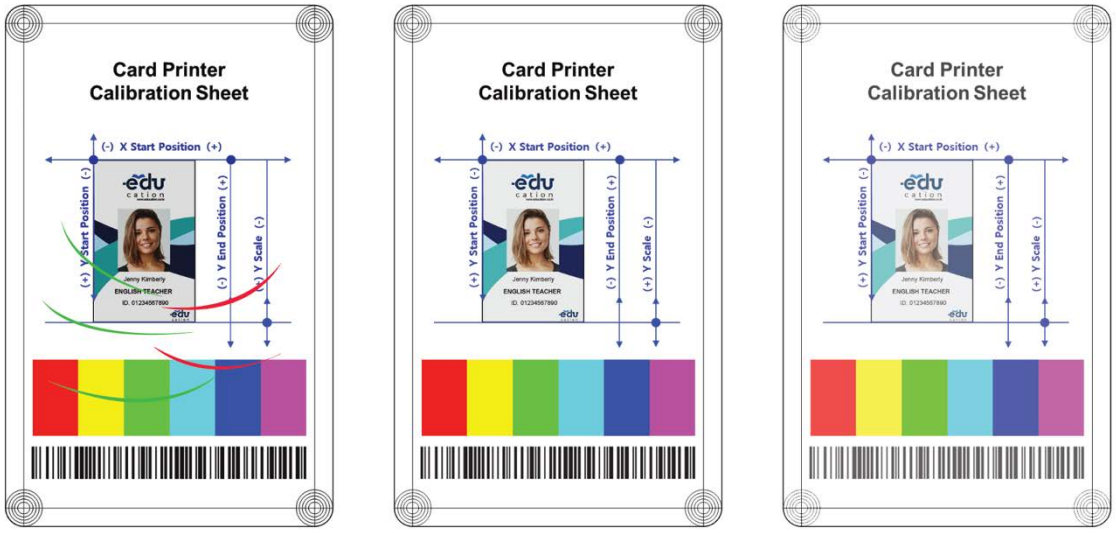
⑤ **Adjust the density**

The SMART printer allows the user to set different density for each color, resin black and overlay. Adjust each density for high quality. Click the "⑥ **Print**" button to print a Calibration Card, check the result, and adjust the density. Repeat this process until you are satisfied with the results.

⑥ **PRINT**

Print a Calibration Card based on the currently set position and density values.

## Adjustment of Color Density




Too Strong　　Proper　　Too Low

Figure 74 Color Density

**Total Density :** Set all the densities (Color, Black, Overlay) at one time.

**YMC Density :** Set color density. A higher YMC density allows for a wider range of colors and vivid images. But if it is too strong, green or red wrinkle marks appear. Or, if it is too weak, the print quality will be dull.

## Adjustment of Black(Resin) Density

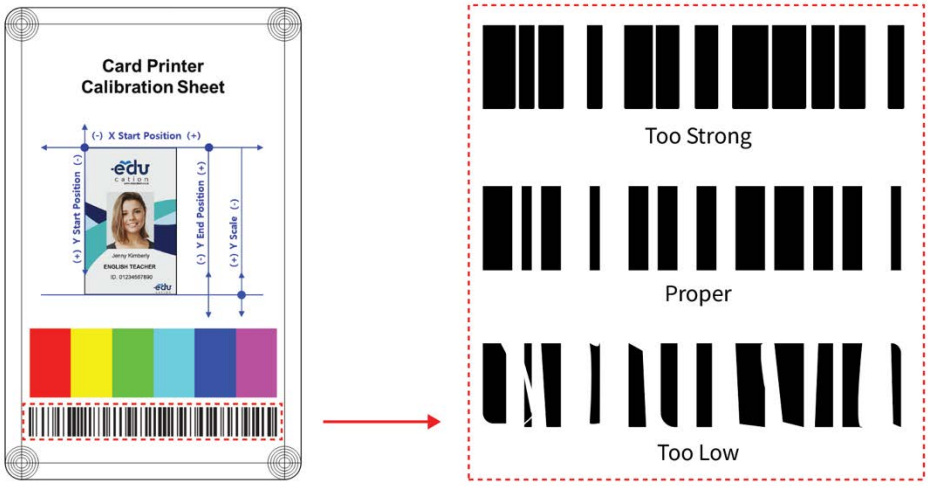
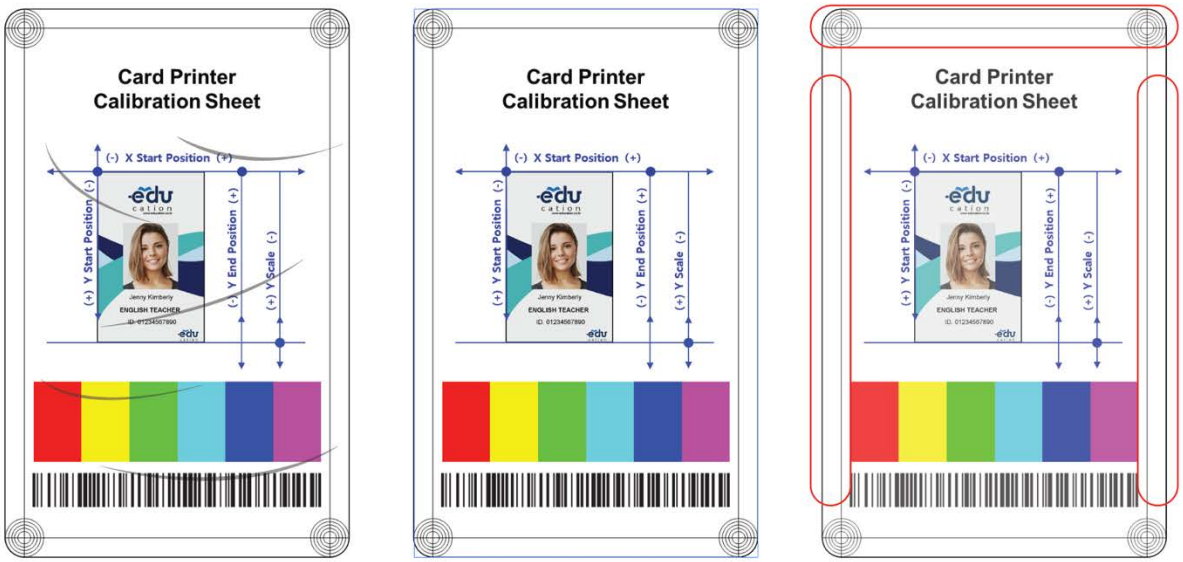



Figure 75 Black (Resin) Density

**Black Density :** Set resin black density. In the picture, the barcode is printed to express density. When the density is too strong, the barcode is printed too thick. When the density is too low, the barcode is too thin, or some parts are missing. Please adjust the black resin density to ensure a clear barcode as the above pictures.

## Adjustment of Overlay Density




Too Strong Proper Too Low

Figure 76 Overlay Density

**Overlay Density :** Set overlay density. If it is too strong, it is a little blurry, and wrinkle marks appear. If it is too low, the overlay panel is not printed at the edges, as indicated by the red circles in the above picture. You can check it with a printed card under the light.

**⑦ Printer information**

The firmware version, the serial number of the printer, and the print head's information

**⑧ Change password**

Change the password required when entering PRINTER CONFIG menu.

※ **Contact the Local reseller if you forget the password.**

**⑨ Set the printer's unique information**

**Change Printer ID :** When using the SDK, a unique ID is required for the SMART printer, regardless of which USB port or IP address it is connected to. It is useful to connect and use several printers to one PC. Default ID is "SMART".

**Set PC Serial :** One of the security features. You can use a printer only with USB connected specific PC. Enabling the "⑥ Security"-"PC Auth." checkbox will only make the printer available when connected specific PC. This "Set PC Serial" button records the unique information of the PC to be used by the printer, which is used as the PC authentication information the next time the printer is turned on.

**Change Head :** When you replace the thermal print head, you must change the head information for optimal quality. Please change the head serial number, resistor, and type of head in the "Change Head Dialog" window after click "Change Head" button. For further details, please refer to the "6.2. Thermal Print Head(TPH) Replacement".

**Set Mag. Encrypt Key :** One of the security features. When using the SDK, the magnetic stripe encoding data transmitted by USB can be encrypted. This button sets the encryption key to SMART printer.

**⑩ Card Issue Counter for the printer**

**Total Issue Count :** The number of issued cards since the factory shipped, and the Cleaning Count of the printer.

**User Issue Count :** The number of issued cards after replacing the head. It is initialized by the "Reset User Issue Count" checkbox on the "Change Head Dialog" pop-up window.

## 3. Printer Advanced Configuration

This menu sets the advanced functions. Most functions are for the particular clients or project. For further details, please contact the Local reseller.

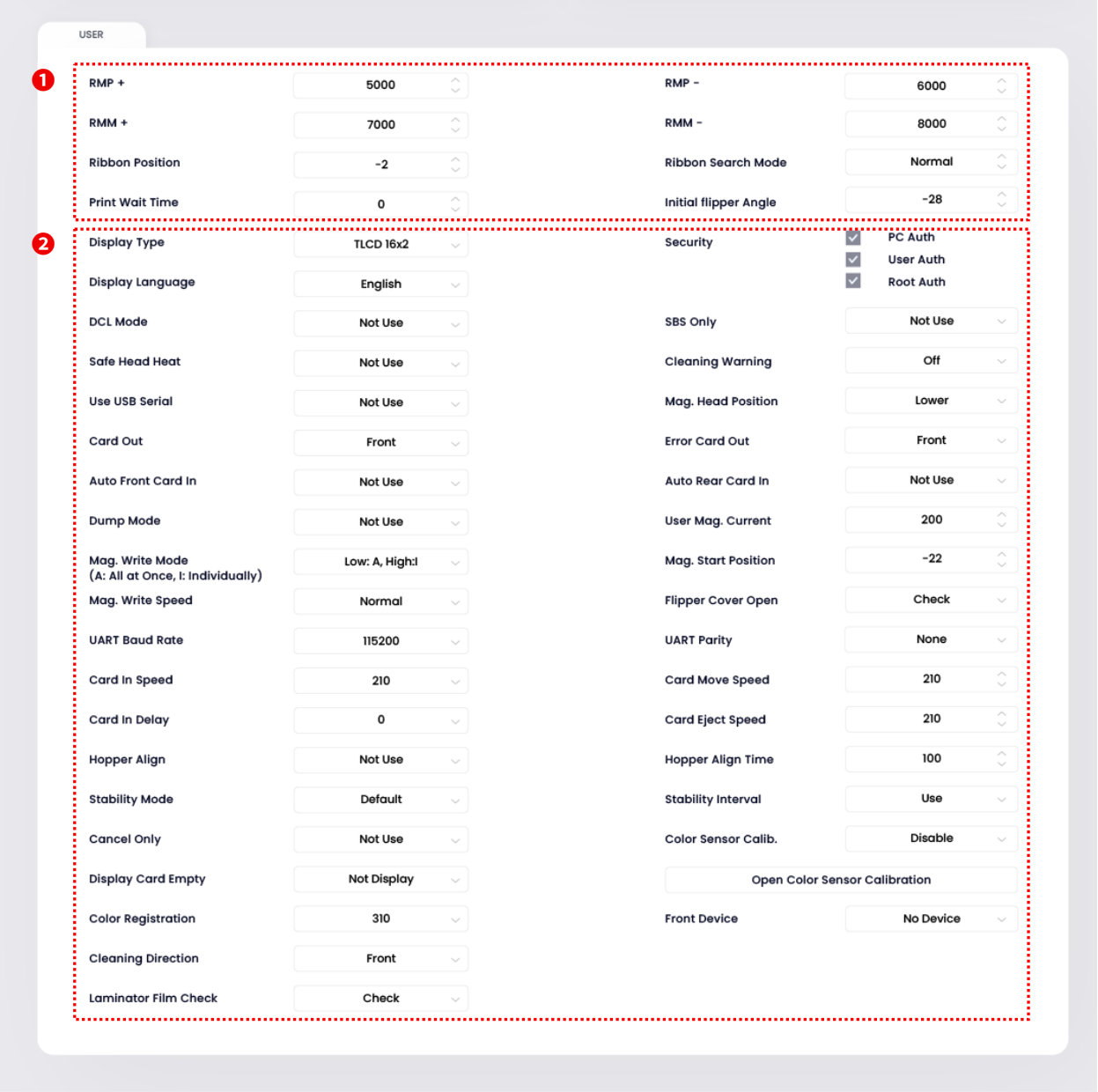



Figure 77 PRINTER CONFIG advanced configuration

### ① Set the Ribbon Motor's configuration

**RMP+ :** Ribbon Motor's torque while printing when the Ribbon balance is maximum

**RMP- :** Ribbon Motor's torque while printing when the Ribbon balance is minimum

**RMM+ :** Ribbon Motor's torque while searching panels when the balance is maximum

**RMM- :** Ribbon Motor's torque while searching panels when the balance is minimum

**Ribbon Position :** The printed image position on each ribbon panel

**Stable Ribbon Detection :** The ribbon search method when printing

**Print Wait Time :** The time from when the print head is lowered to the start of printing

**Initial Flipper Angle :** The angle of Flipper when ejecting a card if 'Card Out' is 'Back'

② **Extra functions configuration**

**Display Type :** A type of LCD display module

**Display Language :** The language of LCD display

"English" is the default for the Character LCD.

"Farsi" and "Chinese" can be set for the Graphic LCD.

**Security menu:** Security features of the printer

**"Root Auth":** The printer is available only when inputting "password" using the SDK.

**DCL Mode :** The printer is controlled in DCL mode of SDK without a printer driver.

**SBS Only :** The printer is controlled in the Step-By-Step mode of the software by SDK. It disables a printer driver.

**Cleaning Warning :** Set to show the "Do Cleaning" message periodically.

**Use USB Serial :** Whether to use the printer's serial number as the USB device serial number. The default is to use the same number for all SMART-32. Please set "USE" when using multiple SMART-32 printers connected to one PC via USB. It enables unique serial numbers for each printer.

**Mag. Head Position :** SMART-32 has two types of magnetic encoder options (Upper / Lower). Set it depending on the installed encoder type.

**Card Out :** The direction of ejecting a printed card

**Error Card Out :** The direction of ejecting an error card during encoding and a stuck card during initialization.

**Auto Front Card In :** Insert a card automatically if the Card In sensor detects it. Used in KIOSK model as needed.

**Auto Rear Card In :** Insert card automatically if the Card Out sensor detects it. Used in KIOSK model as needed.

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

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

**Mag. Write Mode :** Whether to encode the magnetic stripe 3 tracks at once or twice

L:A, H:I : For LoCo cards, 3 tracks are encoded at once, while for HiCo cards, tracks 1/3 and 2 are encoded twice (default).

L:I, H:I : For both LoCo and HiCo cards, tracks 1/3 and 2 are encoded twice.

L:I, H:A : For LoCo cards, tracks 1/3 and 2 are encoded twice, while for HiCo cards, 3 tracks are encoded at once.

L:A, H:A : For both LoCo and HiCo cards, 3 tracks are encoded at once.

**Mag. Start Position :** The start position of magnetic stripe when encoding

**Mag. Write Speed :** The speed of encoding the magnetic stripe

**Flipper Cover Open :** Notify / Ignore “Flipper Cover Open” status in the SMART-32D

**UART Baud Rate :** The speed of communication of the internal serial port. Used to interface with other devices for the KIOSK model.

**UART Parity :** Which error-checking method to use while communicating with other devices via the internal serial port

**Card In Speed :** The speed of inserting a card

**Card In Delay :** The time between inserting a card and the next operation

**Cade Move Speed :** The speed of moving a card

**Card Eject Speed :** The speed of ejecting a card

**Hopper Align Time :** Time to realign a card (Unit: 1ms)

**Stability Interval :** The interval time for operation stability

**Cancel Only :** Only the “Cancel” button is displayed when an error occurs, without the “Retry” button. Used for printing a multi-page document. It prevents touching “Retry” button and re-printing from the 1st page by accident.

**Display Card Empty :** The “Card Empty” message is displayed on the LCD panel when no card is in the hopper.

**Laminator Film Check :** Even if the laminating film is not installed on the SMART-52L, "None Check" can make the printer "System Ready." It can print and encode, except for laminating. ***Function for SMART-52L**

**Open Color Sensor Calibration :** Gets the proper color values to detect each panel with Color In/Out sensors

**Front Device :** Installed the Input hopper type. Used in Kiosk model. (SMART-70 Multi Hopper, Compact Multi Hopper, etc.)

**TLCD PW :** password menu for Touch Screen LCD *** Functions for SMART-52**

**Use TLCD PW :** Whether to use the Touch Screen LCD password or not

**Change TLCD PW :** Change the password required when entering Settings/Diagnostics menu on Touch Screen LCD

**Clear TLCD PW :** Remove the password for Touch Screen LCD

## 4. Flipper Configuration

The “Flipper” tab is displayed if the Flipper option is installed (SMART-32D).

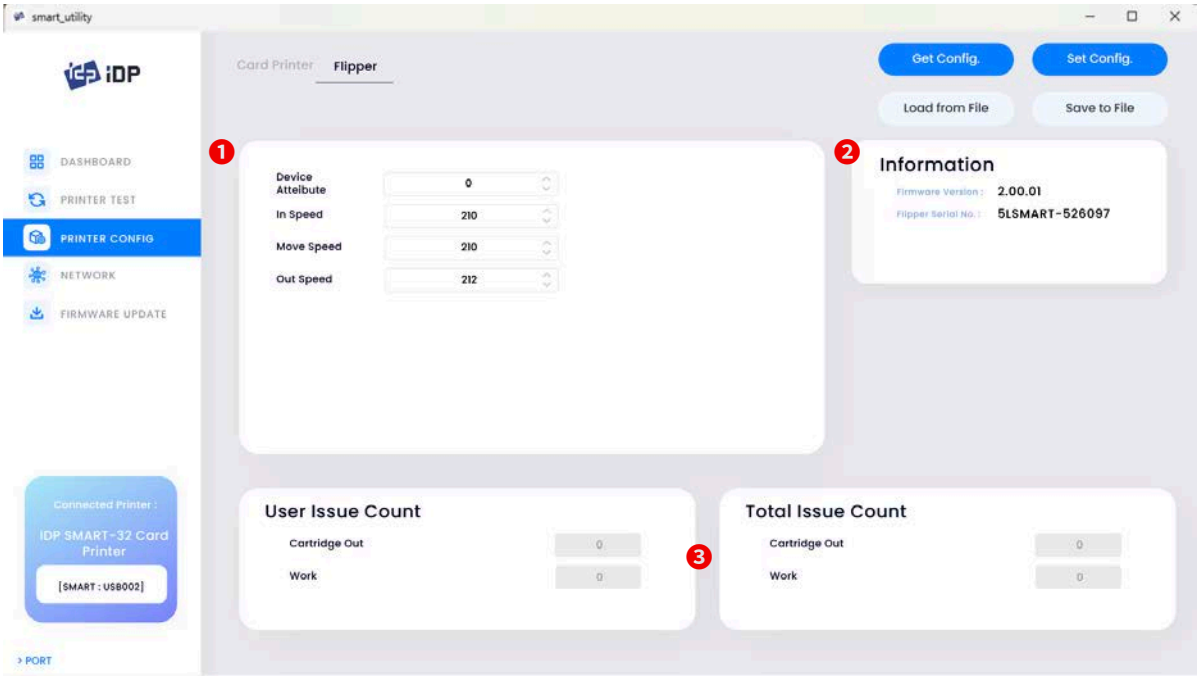



Figure 78 Flipper Configuration

### ① Flipper Basic Configuration

**Device Attribute :** Basic attribute of Flipper.

**In Speed :** The speed of inserting a card into the Flipper.

**Move Speed :** The speed of moving a card in the Flipper.

**Out Speed :** The speed of ejecting a card from the Flipper.

### ② Flipper Information

The firmware version, the serial number of the Flipper option.

### ⑪ Card Issue Counter for the Flipper

**User Issue Count :** The number of currently issued cards

**Total Issue Count :** The number of issued cards since the factory shipped.

# 4.7. NETWORK

## 1. Preparing the network connection




Figure 79 Rear side of SMART-32S printer 1

SMART-32 printer has a network port to connect the LAN cable, as shown in ③.

**① Power Switch**

**② Power Supply Connector**

**③ Network Port**

**④ USB Port**



Figure 80 Rear side of SMART-32S printer 2

Connect the power cable and network cable (RJ45) to the SMART-32 printer.

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

The SMART-32 printer supports a variety of network printing options. Network configuration requires expert network knowledge, so please consult a network professional when changing the network settings.

## 2. NETWORK Configuration

The NETWORK menu requires a password, so the Enter PASSWORD pop-up is displayed.

> The default password of the NETWORK menu is '**admin**'.
> This password is different from the one used in the "PRINTER CONFIG" menu.

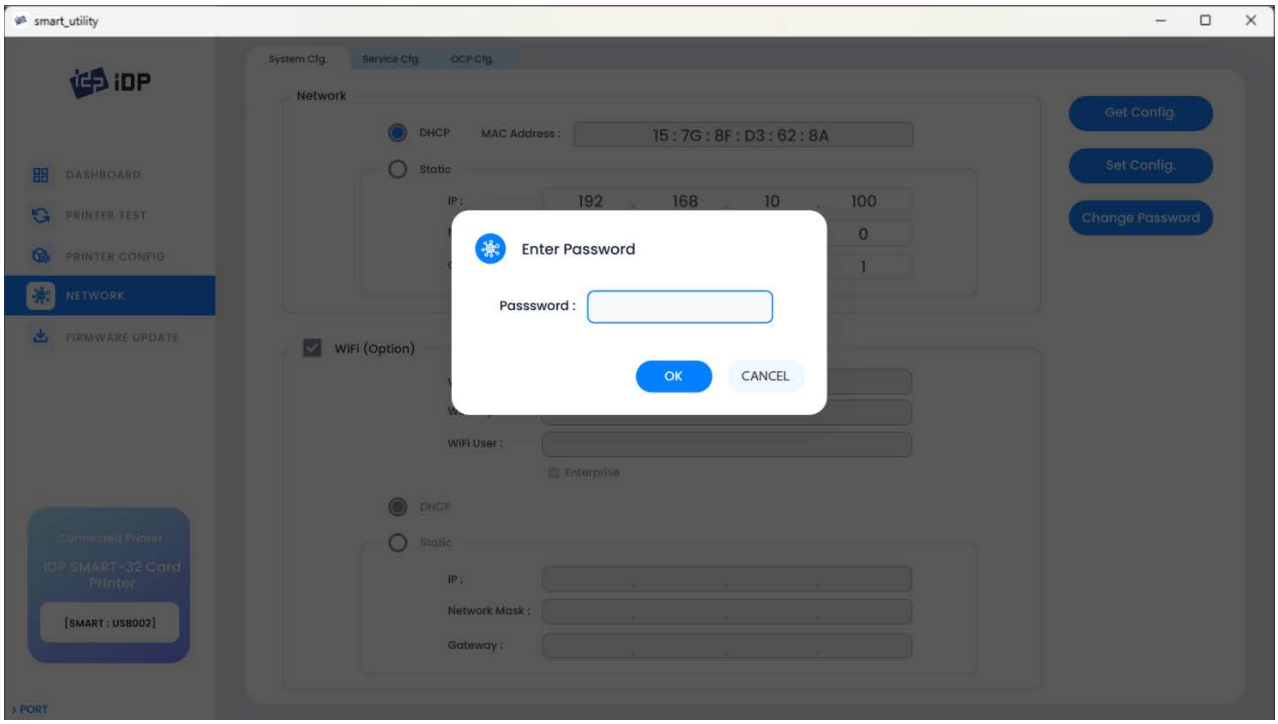



Figure 81 NETWORK

## NETWORK Menu

NETWORK menu is composed of 3 tabs.

- **System Cfg.** : Configuration of Network Connection.
- **Service Cfg.** : Configuration of Network Service.
- **OCP Cfg.** : Configuration of OCP(Open Card Print) function.

## System Cfg. : Network connection configuration

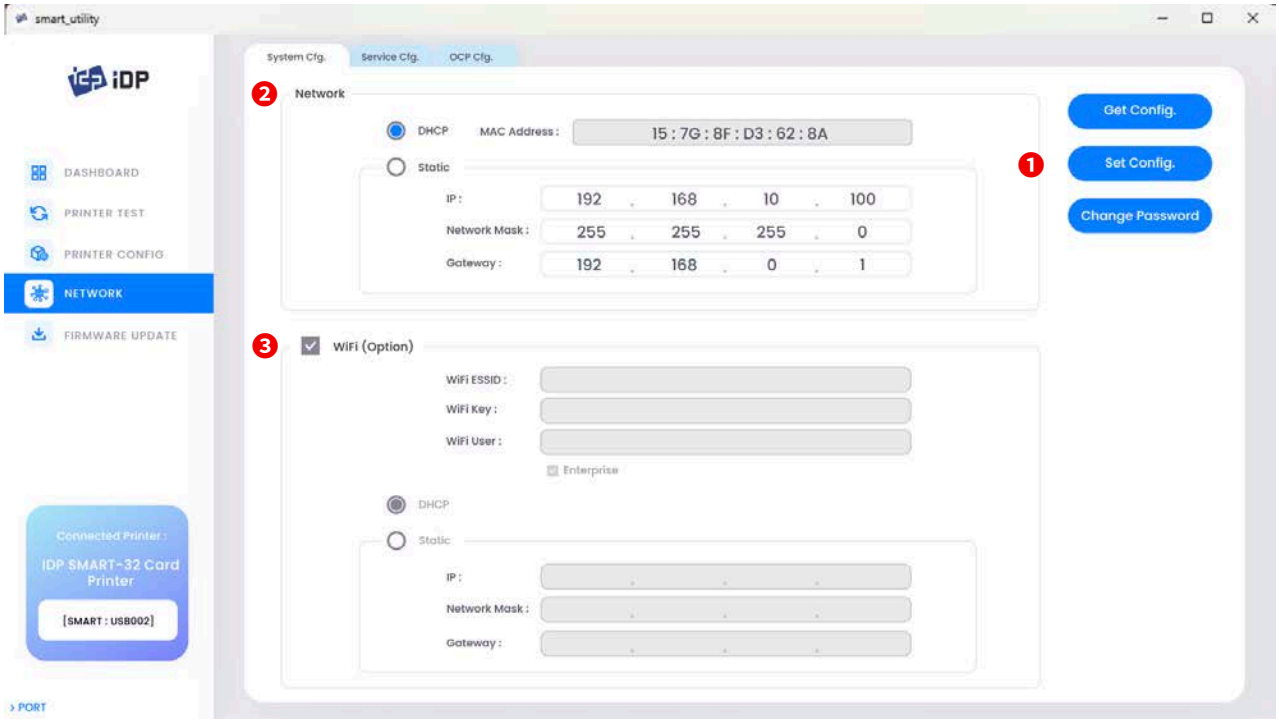



Figure 82 System Configuration tab

① **Save and Load the configuration**

- **"Get Config."** is to load the configuration from the printer.
- **"Set Config."** is to save the changed configuration to the printer.
- **"Change Password"** is to change the password to enter the NETWORK menu.

② **Wired network configuration**

- Select DHCP or Static.
- DHCP is used to assign the IP address by a DHCP server, and the default is **DHCP**.

- Static is used to assign the IP address manually, and the IP address, Network Mask, and Gateway MUST be set correctly.
- Please ask the network administrator if you don't have knowledge or information.
- After setting them, click the "Set Config." button to save the new network configuration and reboot the printer.
- We recommend using a static IP because it is more stable for using a network printer.

③ **Wireless network configuration**

- For wireless network, the WIFI option provided from IDP should be installed in the printer. Please contact the Local reseller to purchase it.
- Check "WiFi(Option)" box to activate it.
- Input the ESSID in "WiFi ESSID" to access
- Input the Key in "WiFi Key"
- Set the IP address (DHCP, Static) in the same way of wired network.
- After setting them, click the "Set Config." button to save the new network configuration and reboot the printer.

## Service Cfg. : Network service configuration

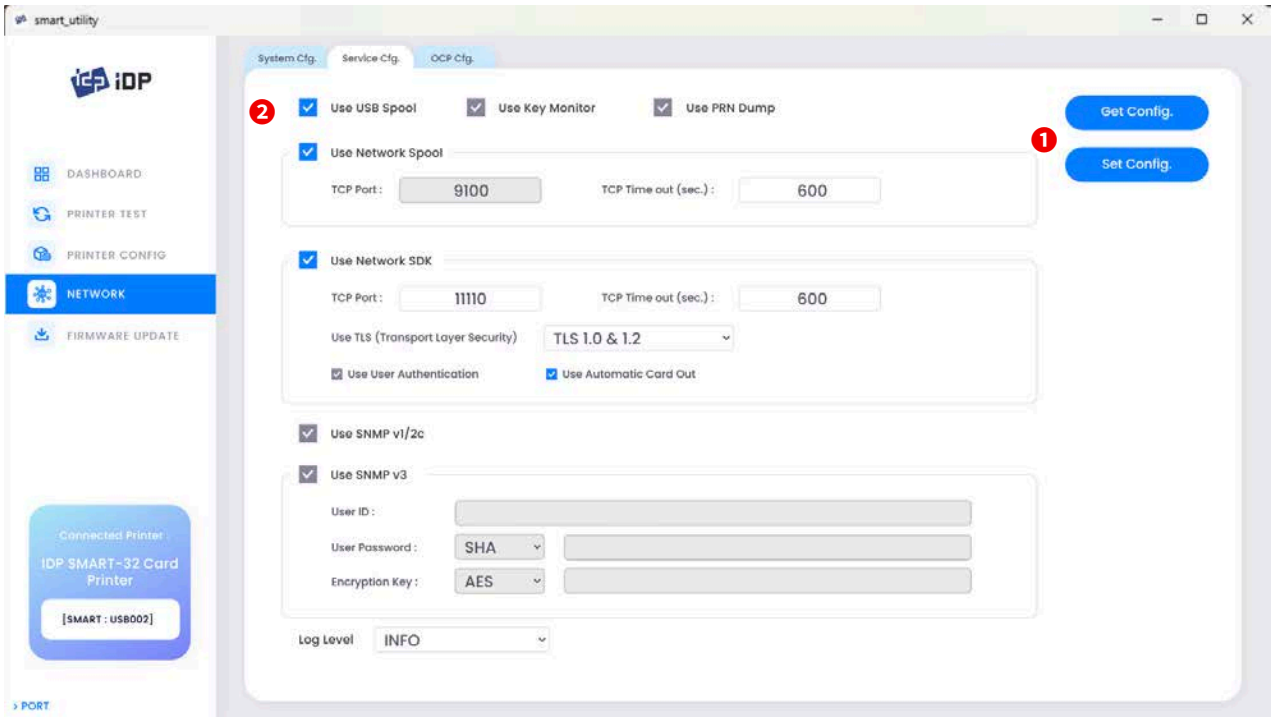



Figure 83 Service Configuration tab

① **Save and Load the configuration**

- **“Get Config.”** is to load the configuration from the printer
- **“Set Config.”** is to save the changed configuration to the printer

② **Network service configuration**

- “Use USB Spool”: The service for printing with the printer driver via USB connection
- “Use Key Monitor”: The service that monitors whether the USB memory is installed properly if it is used in the printer
- “Use PRN Dump”: The service to save the data transmitted as a file
- “Use Network Spool”: The service for printing with printer driver via network
- “Use Network SDK”: The service for printing with SDK of SMART printer. The encryption and user authentication feature can be supported in the SDK
- SNMP v1/2c: Set to support the SNMP v1/2c protocol
- SNMP v3: Set to support the SNMP v3 protocol
- “Log Level”: Set the level of log to save in the printer
- After changing the configuration, click “Set Config” button and reboot the printer.

## OCP Cfg. : Open Card Print Configuration

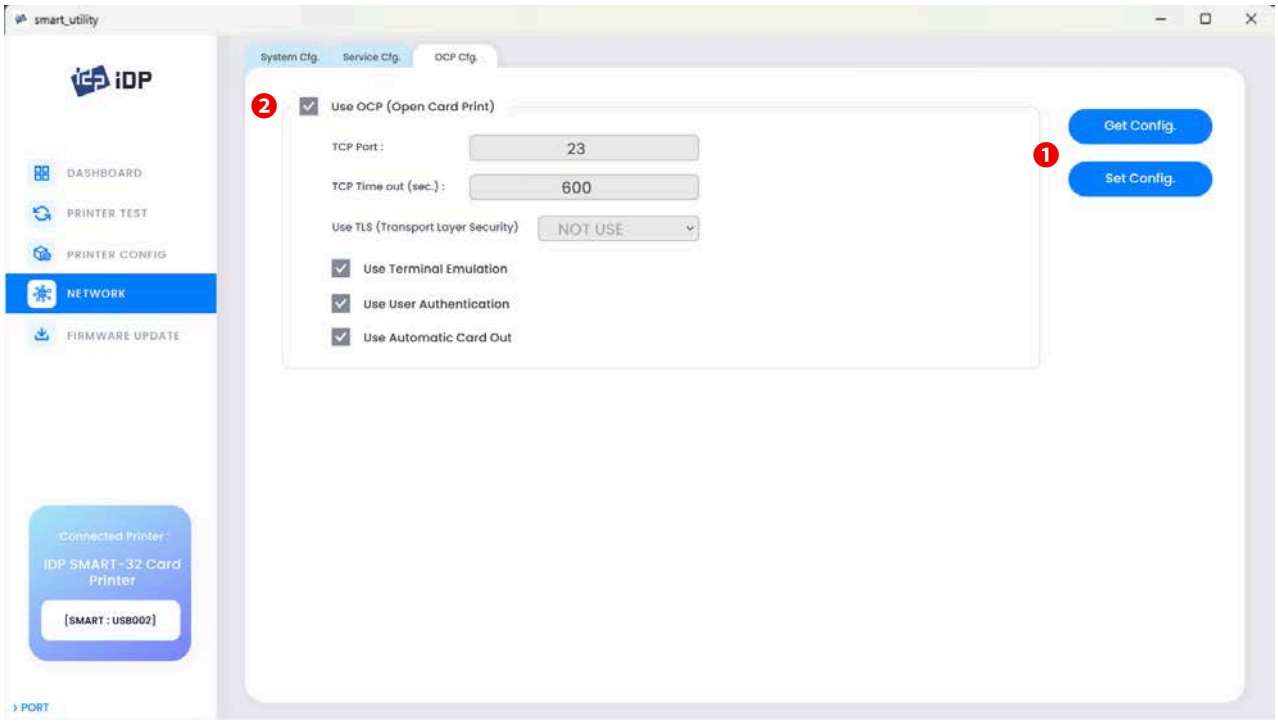



Figure 84 OCP Configuration

① **Save and Load the configuration**

- **"Get Config."** is to load the configuration from the printer.
- **"Set Config."** is to save the changed configuration to the printer.

② **OCP Configuration**

**OCP(Open Card Print)** function is for sending print, encode or other commands via network and the printer works the same without a printer driver regardless of the OS (Windows / macOS / Linux / Android / etc.) of the connected user's PC.

- "Use OCP": Set whether to use OCP function
- "Use Terminal Emulation": The printer sends echo for received commands via Terminal. For security, it supports SSL and User Authentication.
- "Use Automatic Card Out": Set to eject a card after printing automatically. It is unchecked by default, as it can be difficult to retrieve the card immediately if the network printer is far from the user.
- After changing the configuration, click "Set Config" button and reboot the printer.

# 4.8. FIRMWARE UPDATE

SMART-32 printer has 2 kinds of firmware: Printer and Flipper.

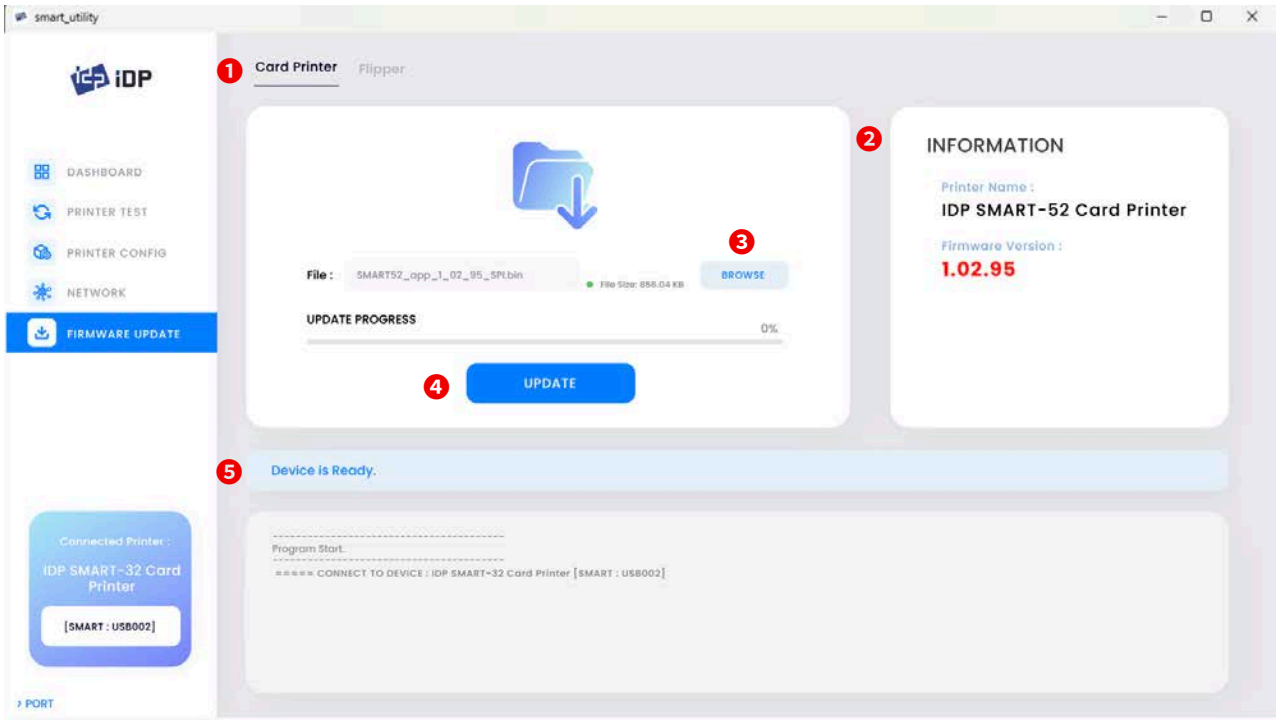



Figure 85 FIRMWARE UPDATE

## 3. FIRMWARE UPDATE

① **Card Printer / Flipper tab:** Select the device to update the firmware.

※ **Flipper tab is displayed only if it is installed.**

② **INFORMATION:** The device name and current firmware version are displayed.

③ **BROWSE:** Select the firmware file to update.

④ **UPDATE:** Start the firmware update

※ **Do not turn off the printer and do other jobs during the updating operation.**

⑤ **Status of the device:** The connected device's status is displayed.

# 5. Troubleshooting

## 5.1. Cleaning the printer

To maintain the best condition of SMART-32 printer, it requires regular cleaning of the printer. Cleaning the printer is easy with a Long Cleaning Card, as shown in the image. Please Contact the IDP printer Reseller to purchase a Long Cleaning Card.




Figure 86 Long Cleaning Card for SMART-32 printer

After preparing the Genuine Long Cleaning Card, click the “Clean Printer” button in the “Service” tab of the SMART-32 printer driver. Then, the “Clean Printer” program runs.
You can clean the printer in the “Cleaning” menu of Touch Screen LCD, too.

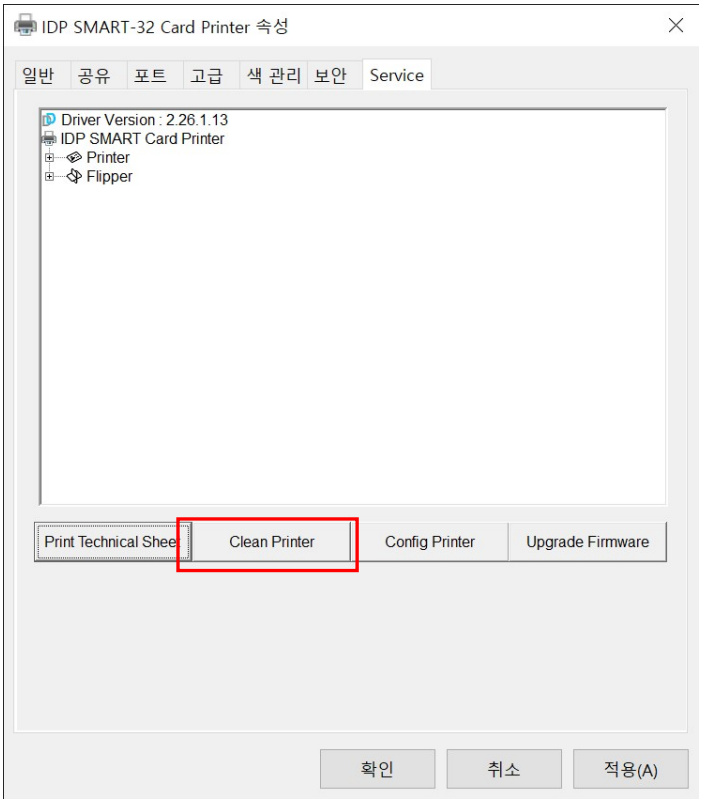



Figure 87 Run Clean Printer program

**Step 1 :** Connect the SMART-32 printer to PC and turn it on, and prepare the Long Cleaning Card.

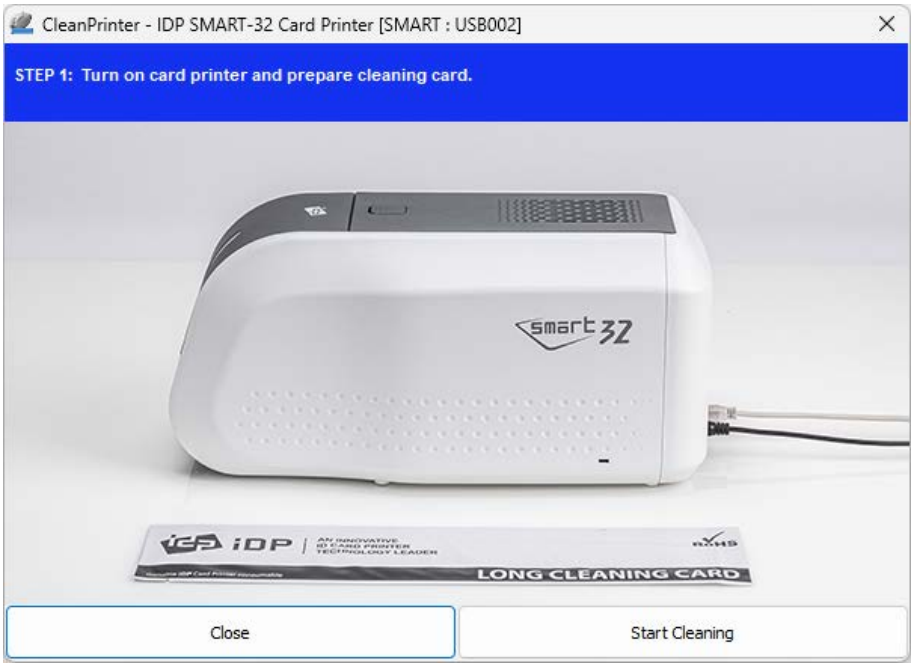



Figure 88 Cleaning printer Step 1

**Step 2 :** Open the Hopper and Top Cover and remove the Cards and Ribbon Cartridge.




Figure 89 Cleaning printer Step 2

**Step 3 :** Insert the Long Cleaning Card into the printer through the Input Hopper. When the Cleaning Card reaches the Cleaning Roller inside, it will move automatically. It is normal for the rollers to rotate while the end of the cleaning card is stuck in the hopper and can't go any further.




Figure 90 Cleaning printer Step 3

**Step 4 :** Close the Top Cover to clean the Thermal Print Head and the rollers. When the Top Cover is closed, Cleaning Card will move back and forth to clean.




Figure 91 Cleaning printer Step 4

**Step 5 :** Wait until the cleaning is completed. When the cleaning is completed, the Long Cleaning Card will be ejected automatically as the picture.




Figure 92 Cleaning printer Step 5

**Step 6 :** Remove the Long Cleaning Card from the Input Hopper. After installing the cards and Ribbon Cartridge into the printer, the printer is ready for use.




Figure 93 Cleaning printer Step 6

## 5.2. Thermal Print Head(TPH) Replacement

If the Thermal Print Head is damaged or out of order, replace it by following steps.

---

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

TPH Type : B = KPE (A = KEE, No longer used)
Serial number : see in the red box
Head resistance: see the green box (Last 4 digits)

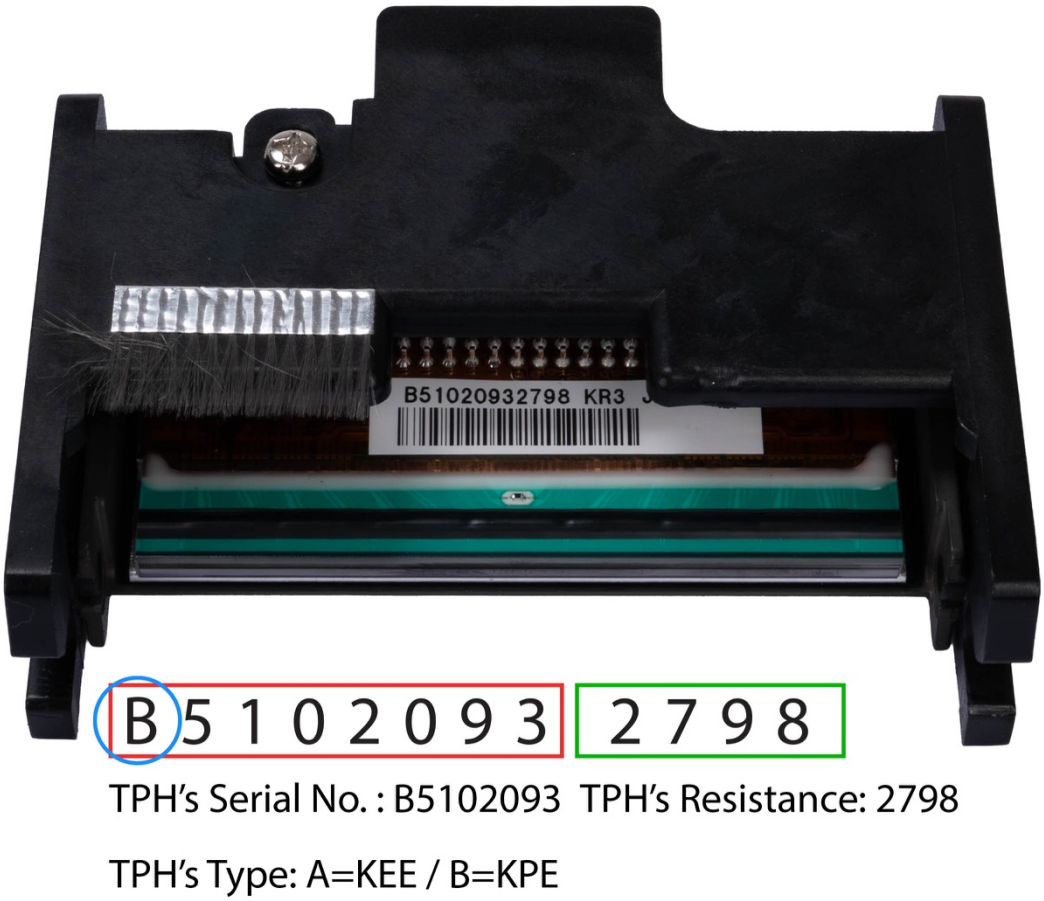



Figure 94 Print Head

**Set up the new Print Head's configuration using the SMART Utility.**

**Step 1:** Run the SMART Utility and click 'PRINTER CONFIG' button.

**Step 2:** Click "Change Head" button.

**Step 3:** Input the Print Head's Serial number and Resistance on the label of Print Head.

**Step 4:** Click "Set Config" button to save the new Print Head's configuration.

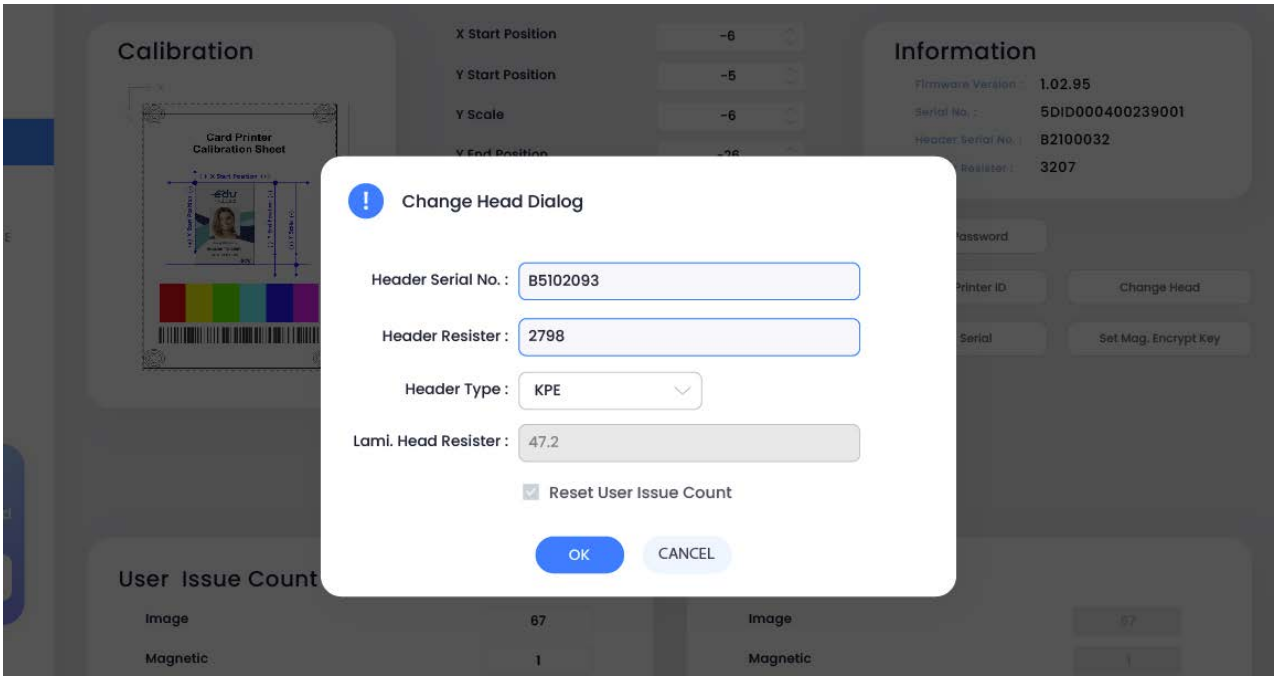



Figure 95 Configuration of Print Head

**Replace the New Print Head.**

**Step 1:** 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 push the locked Hook to release the Print Head.

(3) Disconnect the Print Head from the Print Head Cable carefully.

⚠ **The Print Head is very hot after printing.**

**Step 2:** Installing the new Print Head

(1) Connect new Print Head to the Print Head Cable.

(2) Put the Print Head on the shaft of Top Cover and pull upward until locked by Hook.

## Replacement of the Print Head




Figure 96 Print Head Replacement

### Set up the printing position and the densities

Adjust the printing position on the card and densities using SMART Utility. Refer to “4.6. PRINTER CONFIG”.

### Calibrate the Print Head’s angle

To get the best print quality, the Print Head should be located vertically with a card surface. If print quality has a problem, adjust the Print Head’s angle by turning the screw clockwise or counterclockwise by 90 degrees at a time.

※ It is recommended to use it as it is because the new Print Head is already optimized.

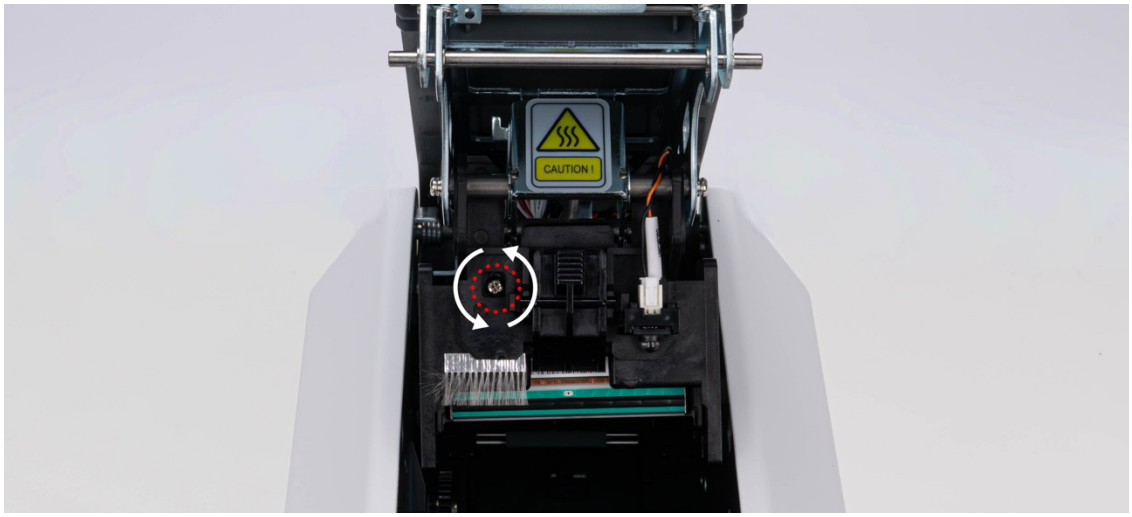



Figure 97 Print Head’s Angle

## 5.3. Card Movement

### 1. Cards can't insert into the printer from input hopper:

- **Non-standard cards or bad cards :**
  Change the cards. The printer only work normally with the CR80 card (54mm x 86mm).
- **The 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.

### 2. Card Move Error occurs when the ribbon is coiled around the transfer rollers or the printing roller:

Open the Top Cover, remove the card and the coiled ribbon from SMART-32 printer using 'Forward / Backward' button on the Touch Screen LCD. If this problem occurred frequently, check the below things

- **Non-standard cards or bad cards :**
  Change the cards. The printer only work normally with the CR80 card (54mm x 86mm).
- **The transfer rollers or the printing roller is contaminated with the dust and debris :**
  Remove the dust and debris with the Long Cleaning Card as section '1.4.6 Cleaning'.
- **Wrong printing position setting :**
  Adjust the printing position as section '4.6 PRINTER CONFIG'.
- **When operating temperature and humidity is out of the acceptable operating limit of the printer :**
  Adjust the operating environment of the printer.

### 3. An Error occurs while the card is being transferred:

First of all, check the Error message on LCD display. Open the Top Cover, remove the card and the coiled ribbon from SMART-32 printer using 'Forward / Backward' button on the Touch Screen LCD. If this problem occurred frequently, check the below things.

- **Non-standard cards or bad cards :**
  Change the cards. The printer only work normally with the CR80 card (54mm x 86mm).
- **Printer setting is changed or not proper :**
  Contact the Local reseller.
- **The transfer rollers or the printing roller is contaminated with the dust and debris :**
  Remove the dust and debris with the Long Cleaning Card as section '1.4.6 Cleaning'.
- **The card surface is contaminated with the dust and debris :**
- Check the card surface and remove any dust and debris and try again. Check if the disposable Cleaning Roller is weak adhesive or not installed. If this problem occurs again, retry with new card.

## 5.4. Printing Quality

### 1. Not printed or wrong colors printed spots:

- **The card surface is contaminated with the dust and debris :**
  After checking the card, change it to another card.
- **The Disposable Cleaning Roller is contaminated with the dust and debris :**
  Check the cleaning roller. If there is much dust, replace the cleaning roller with a new one.
- **Much dust in the printer :**
  Remove the dust and debris with the Long Cleaning Card as section '5.1 Cleaning'.

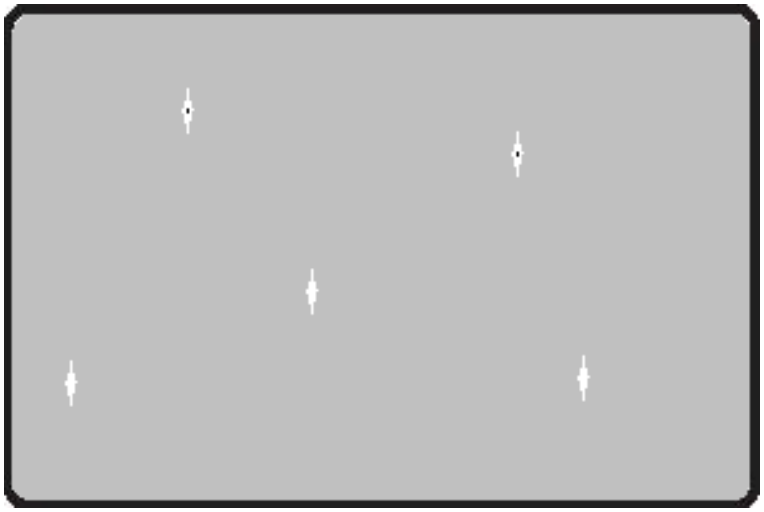


Figure 98 Printing quality example 1

## 2. Not printed horizontal line:

- **The Ribbon Cartridge is installed improperly :**
  Check the status of Ribbon Cartridge installation and whether the ribbon has wrinkles.
- **The Print Head is contaminated with the dust and debris :**
  Clean the Print Head with Cleaning Kit.
- **The Print Head is damaged or the surface of the Print Head is scratched :**
  Contact the Local reseller to replace the Print Head.



Figure 99 Printing quality example 2

## Unclear or uneven printing:

- **Uneven or bad card surface :**
  Change the card.
- **Too high or low setting of the color density :**
  Adjust the Color Density as section ‘4.6 PRINTER CONFIG’
- **The Print Head is contaminated with the dust and debris :**
  Clean the Print Head with Cleaning Kit.

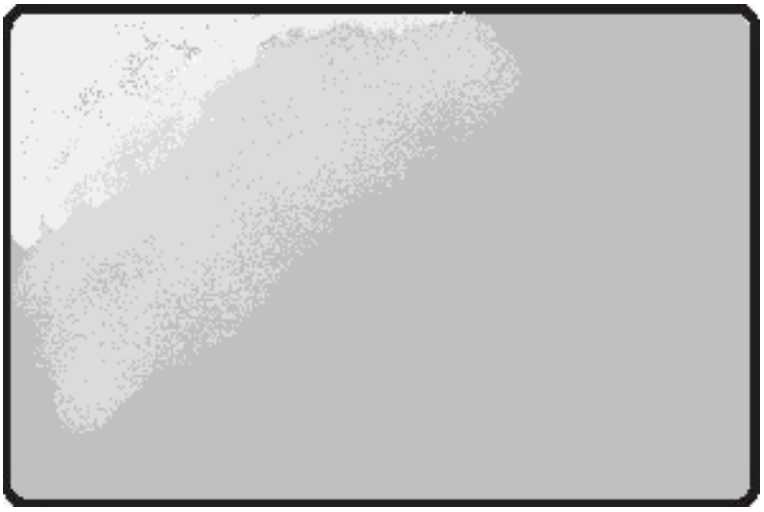


FIgure 100 Printing quality example 3

## 3. Not aligned color printing:

- **Non-standard cards or bad cards :**
  Change the cards. The printer only work normally with the CR80 card (54mm x 86mm).
- **Uneven or bad card surface :**
  Change the card.
- **The transfer rollers or the printing roller is contaminated with the dust and debris :**
  Remove the dust and debris with the Long Cleaning Card as section ‘5.1 Cleaning’.
- **Worn-out printer :**
  Contact the Local reseller.

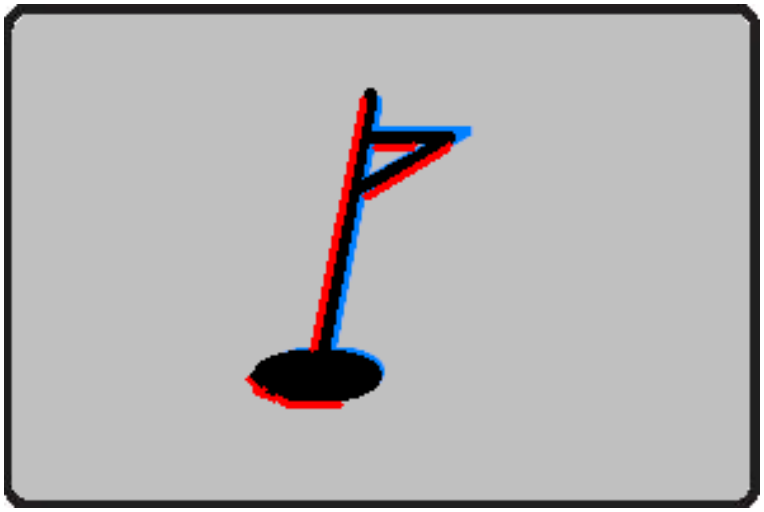


Figure 101 Printing quality example 4

## 4. Unplanned color printing:

- **Non-standard cards or bad cards :**
  Change the cards. The printer only works normally with the CR80 card (54mm x 86mm).
- **Uneven or bad card surface :**
  Change the card.
- **The transfer rollers or the printing roller is contaminated with the dust and debris :**
  Remove the dust and debris with the Long Cleaning Card as section '5.1 Cleaning'.
- **The ribbon balance information on the Ribbon tag is not matched with real balance :**
  Contact the Local reseller.
- **Worn-out printer :**
  Contact the Local reseller.



Figure 102 Printing quality example 5

## 5.5. Magnetic Stripe encoding

### 1. Magnetic encoding Read/Write error occurs:

Touch the “Retry” button on the Touch Screen LCD.

- **The magnetic head is contaminated with the dust and debris :**
  Clean the magnetic head with the cleaning kit.
- **The magnetic encoding data is not transmitted or the wrong data is transmitted :**
  Check the encoding setting of the program and the driver, and the correct encoding data format is transmitted for each track.
- **The card is not magnetic card, or inserting direction is wrong :**
  Change the card or the inserting direction.
- **Bad magnetic stripes on the card :**
  Change the card.

## 5.6. General operation

### 1. Ribbon snapped during printing

Open the Top Cover and take out the cartridge. After reconnecting by taping the snapped ribbon, install it again. If this problem reoccurred, check the below things.

- **Non-standard cards or bad cards :**
  Change the cards. The printer only works normally with the CR80 card (54mm x 86mm).
- **Too high setting of the color density :**
  Adjust the Color Density as section '4.6 PRINTER CONFIG'.
- **Wrong printing position setting with no margin on the edge :**
  Adjust the printing position as section '4.6 PRINTER CONFIG'.

### 2. LCD displays "Ribbon Not Found" message:

Touch the "Retry" button on the Touch Screen LCD. If this problem reoccurred frequently, check the below things**.**

- **Not genuine ribbon :**
  Replace it with the genuine ribbon. Contact the Local reseller.
- **Ribbon is all consumed :**
  Printing is not possible when the ribbon has reached the specified print quantity. Replace the ribbon with a new one. (Extra panels are provided in case of damage or skipping, but cannot be used in excess of the quantity.)

### 3. Printer doesn't operate even if the printing data has been transmitted

- **Printer power off :**
  Turn on the printer. Check if the printer adaptor is connected to a power outlet and the printer.
- **Bad power adaptor.**
  Contact the Local reseller to replace the adapter.
- **The printer driver is "Offline" status.**
  Change the printer driver to "Online" status.
- **The printer's USB cable is disconnected or the connection is bad (USB conn.):**

Check the USB cable's connection between PC and the printer.

If not good, connect the USB cable to other USB port of PC.

- **Bad USB cable (USB conn.):**

  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 (USB conn.):**

  Check the port setting of the printer driver and select the correct port.

- **No ribbon in the printer or an error occurs :**

  Install ribbon in the printer or resolve the error.

- **Too long power or USB cable (more than 1.5m) :**

  Use the cables provided with the printer. Contact the Local reseller if you don't have one**.**

- **PC's USB port is down :**

  Reboot your PC.

# 6. Specifications

| Model | | SMART-32S | SMART-32D | SMART-32R |
|---|---|---|---|---|
| Printing | Print Type | Dye-Sublimation | | |
| | Print Area | Edge to Edge | | |
| | Resolution | 300dpi (Color & Mono), 600 & 1200dpi (Mono only) | | |
| | Dual Side Printing | Option (with Flipper) | Yes | No |
| Card | Card Feeding | Automatic | | |
| | Card Size | ISO CR80 | | |
| | Card Thickness | 0.38mm (15mil), 0.76mm (30mil) | | |
| | Card Type | PVC, PET, Composite PVC | | |
| Printing Speed | Monochrome | Max. 720 cards/hour | | Max. 300 cards/hour |
| | YMCKO | Max. 260 cards/hour | | - |
| | YMCKOK | - | Max. 190 cards/hour | - |
| Capacity | Input Hopper | 80 Cards | | |
| | Output Hopper | 25 Cards | | |
| System | Memory | 512MB RAM | | |
| | Control | 1 LED Button \| 2 Line LCD & 2 LED Buttons (Option) | | |
| | Supported Platforms | MS Windows 7/ 8/ 10/ 11, Mac OS, Linux | | |
| | Communication | USB, Ethernet / WiFi (Option) | | |
| | Power Supply | DC 24V, 2A | | |
| | Power Consumption | 48 | | |
| | Temp. / Humidity | 15~35°C / 35~70% | | |
| Security | Kensington Lock | Option | | |
| Dimensions | Millimeter (WxLxH) | 167 x 383 x 191 | 167 x 478 x 191 | 167 x 383 x 191 |
| | Inch (WxLxH) | 6.6 x 15.1 x 7.5 | 6.6 x 18.8 x 7.5 | 6.6 x 15.1 x 7.5 |
| Weight | Kg / lbs. | 3.2 / 7.1 | 3.8 / 8.4 | 3.2 / 7.1 |
| Encoding | Magnetic | ISO 7811 (Track I, II, III Read/ Write, HiCo/ LoCo), JIS II | | |

| | | |
|---|---|---|
| Options | Contact | ISO 7816 (ID-1) |
| | Contactless | MIFARE, ISO 14443 (Type A/ B), ISO 15693, DESFIRE, iCLASS |

*Specifications and availability may change without notice.*

■ FCC Instructions

- FCC Compliance Statement(Part 15)

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- FCC Interference Statement(Part 15.225)

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

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

- FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.