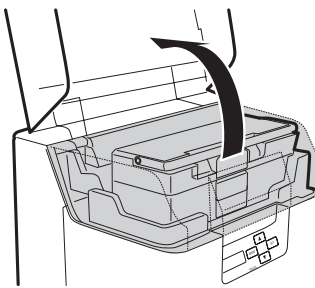


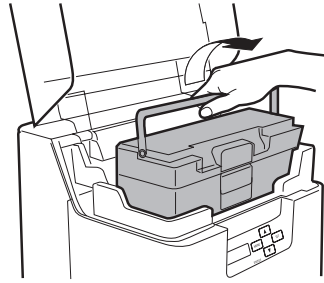
3

3-8 Primary transfer feeding roller cleaning

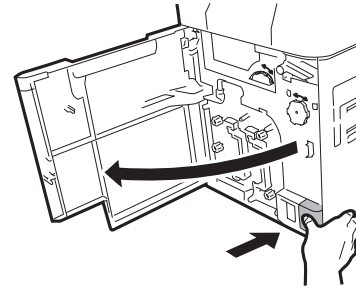
- 1 Turn off the power.
- 2 Open the top cover and remove the card feeder.
- 3 Open the front cover.
- 4 Remove the ink ribbon cassette and the clear Retransfer film.
- 5 Insert a flat screwdriver into the groove on the end of the feeding roller.
- 6 Turn the screwdriver, and wipe the feeding roller inside the printer using an Evolis cotton swab fully moistened with water.
- 7 Return the ink ribbon cassette and the clear Retransfer film cassette to their original positions.
- 8 Close the front cover.



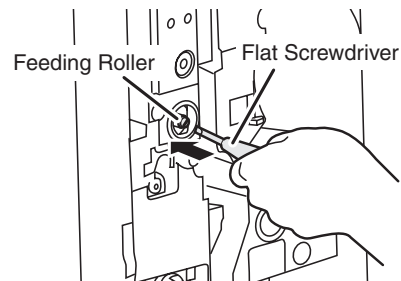
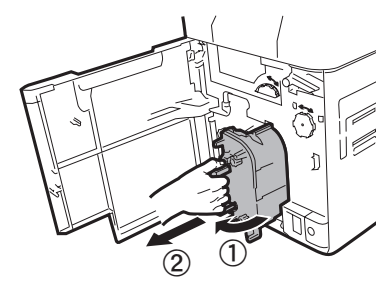
2



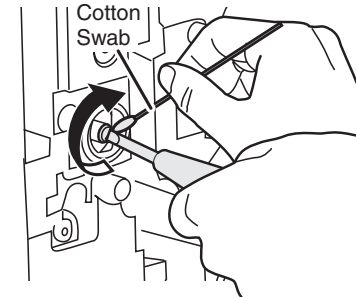
3



4



5



6

4

Help

This section gives suggestions allowing problems that may arise when using your printer to be pinpointed. If you do not manage to solve your problem, this section also explains how to contact Evolis technical support.

4-1 Introduction to the printer menu

The **Avansia** printer has an LCD unit and LED indicator enabling the operator to see the operating condition of the equipment and make adjustments to the most common settings.

The control panel comprises 3 units:

- One LCD display unit
- Four navigation buttons used to move around the menu, and confirm or cancel selections
- One dual-colour LED: blue when running normally, red in the event of a warning requiring the operator's attention

When running, the information shown varies:

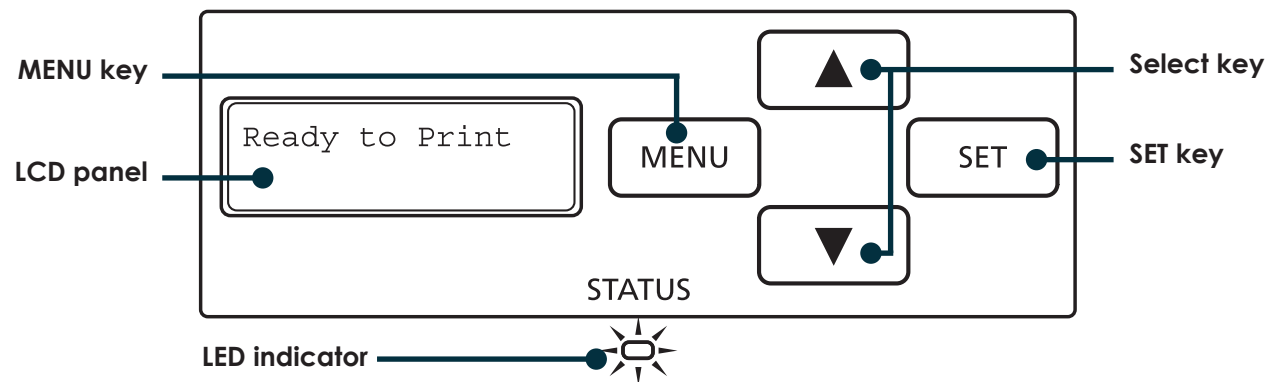
- Steady blue LED - Ready for printing
- Flashing blue LED – Data transfer with the PC or printing in progress
- red LED - Cards or Colour or monochrome ribbon have run out
- Flashing red LED - Cards jammed or other error has occurred



4

In the event of operator intervention activating the menu, the LCD unit is converted into a dialogue and configuration support interface. The LCD is set only to english.

Generally speaking, unless otherwise indicated, navigation works as follows:



4-1a NORMAL MODE

Normal Mode is used for printing cards. When the power is turned on the printer starts in Normal Mode.

normal Mode Message List:	Description
Initializing	The printer is initializing. Remaining cards (abnormal cards) are ejected from the card ejection slot.
Ready to print	In standby. This awaiting a request to print cards.
now printing	Printing cards.

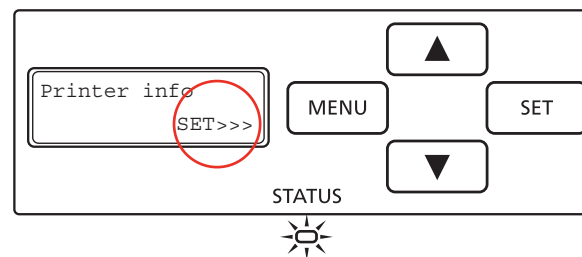
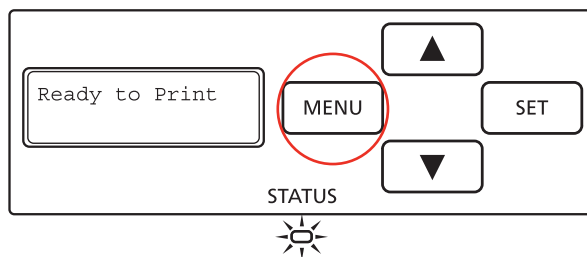
4

4-1b USER MODE

User Mode is used to set operations and check the status of the printer.

To switch from Normal Mode to User Mode, follow the procedure below :

- 1 Press the Power Switch to turn on the power. When the power starts and the printer turns on in Normal Mode, and [Ready to Print] appears on the LCD Panel.
- 2 Press the MENU Key.
- 3 The User Mode top menu is displayed on the LCD Panel.



Or

- 1 Press the ▼Key several times to display [NO].
- 2 Then press the SET Key.
- 3 The User Mode top menu is displayed on the LCD Panel.

To switch from User Mode to Normal Mode, follow the procedure below:

- 1 Press the MENU Key several times to display [Exit Menu].
- 2 Press the SET Key.

4

4-2 Warnings and diagnosis

Although the Evolis printer was designed to work independently, keeping user involvement to a minimum, it may nonetheless prove useful to gain some familiarity with the main warnings.

LCD Display	Action required
Push SET Key	Press the SET Key.
Card Empty	Load cards into the card feeder.
Cover is open	Correctly close the cover.
Low Temperature	Ensure the environment temperature is at least 10°C and press SET Key.
Check Ribn/Film	Confirm that the ribbon and clear Retransfer film are correctly loaded.
Remove Cards	Remove the cards by rotating the Ejection Dial.



4

Warnings and error messages

LCD Display	Description	Action required
Cover is Open	The front cover is open.	Yes Close the front cover.
Card Empty	There are no more cards.	Yes Load cards into the card feeder. Ensure the environment temperature is 10°C or higher, and press the set Key.
Low Temperature	The temperature in which the printer is located is too low.	Yes Replace the ribbon.
Ribbon Empty	The monochrome or colour ribbon has been used up.	Yes Reload the ribbon.
Ribbon Type	The type of the monochrome or colour ribbon cannot be identified by the printer.	Yes Reload the ribbon.
Ribbon Wind Up	The monochrome or colour ribbon could not be wound correctly. The ribbon may be cut.	Yes Reload the ribbon. Repair the cut ribbon.
Film Empty	The clear Retransfer film has been used up.	Yes Replace the clear Retransfer film.
Film Type	The type of clear Retransfer film cannot be identified by the printer.	Yes Reload the clear Retransfer film. Check what kind of clear Retransfer film is supported by the printer.
Film Wind Up	The clear Retransfer film could not be wound up. The clear Retransfer film may be cut.	Yes Reload the clear Retransfer film. Repair the cut clear Retransfer film.
Rbn & Film Empty	Both the monochrome or colour ribbon and the clear Retransfer film have been used up.	Yes Replace both the ribbon and the film.
Card Jam Feeder	Cards cannot be fed into the printer. Is the card feeder loaded correctly. The feeding roller is dirty.	Yes Press the SET Key. Correctly load the card feeder. Confirm that the card feeder is loaded properly. Clean the feeding roller located below the card feeder.
Card Jam F.Turn	There is a card jam.	Yes Press the SET Key.
Jam Print	An error occurred, and cards cannot be output.	Yes Remove the cards by rotating the ejection dial and press the SET Key.
Card Jam Mg	The feeding roller may be dirty.	Yes Clean the feeding roller. If the feeding roller is excessively dirty, clean the printer using a cleaning card.
Card Feed Remove	There is a card jam.	Yes Remove the cards by rotating the ejection dial and press the SET Key.

4

Warnings and error messages

LCD Display	Description	Action required
Card Turn Remove	The type of the monochrome or colour ribbon cannot be identified by the printer.	Yes Reload the ribbon.
Card Pr Remove	The feeding roller may be dirty.	Yes Clean the feeding roller. Of the feeding roller is excessively dirty, clean the printer using a cleaning card.
Card Mg Remove		Yes
Service Call	An error that requires repair may occur.	Yes Turn off and on the power. Repairs are necessary if error reoccurs.
Download Error	Program version update was interrupted.	Yes Turn off and on the power, then start version update again.
Mg Write	Reading / writing of the magnetic data failed.	Yes Press the SET Key.
Mg Read Error	The card set is not in the correct direction. There is scratches or dirt on the card's magnetic strip. The magnetic characteristics of the card do not match the specifications of the magnetic encoder and the settings of the magnetic encoder.	Yes Check the loading direction of the cards. Use undamaged cards. Check the specifications of the magnetic encoder.
IC1 Access Error	During operation of the IC option 1, data reception by the computer was interrupted.	Yes Press the SET Key.
IC2 Access Error	During operation of the IC option 2, data reception by the computer was interrupted.	Yes Press the SET Key.
External Box	During operation of the external box, data reception by the computer was interrupted.	Yes Press the SET Key.

4

4-3 Diagnosis help

In this section, you will find all the information you need to carry out a few simple checks that you may be asked to run by your Evolis dealer to help you as effectively as possible.

➤ Identifying installed software versions

As previously shown, you can easily identify the version of the software embedded in your printer (firmware number) by means of the test card.

You can also identify the version of the print driver installed as follows:

- ➊ From the **Start** button found bottom-left on the Windows task bar, select **Printers and faxes**.
- ➋ Select your printer and double click.
- ➌ From the **Printer** menu, select **Properties**.
- ➍ Go to the **Graphics** tab and then click **About**.



4

4-4 Troubleshooting



Do not attempt to use tools or other items to repair your printer in the event of problems, in case major damage is caused.

4-4a PRINTING PROBLEMS

➤ Nothing prints?

- 1 Check the print driver**
Check that there is a print driver for your printer in the Windows configuration.
Check that the printer is selected as the default printer.
- 2 Check the printer's power**
Check that the power cable is correctly connected to the printer and to a working electrical socket.
The printer is on and the LCD Panel says [Ready to Print].
Make sure you are using the power cable supplied with the printer.
- 3 Check the USB cable**
Check that the USB cable is connecting the printer to your computer.
- 4 Check the ribbon and the clear Retransfer film**
Check that the ribbon is fitted correctly and that the print head bracket is locked in place.
- 5 Check the cards**
Check that there are cards in the card feeder.
Check that no cards are jammed in the printer.
- 6 Print a test card**
See elsewhere in this section for the procedure to be followed.

➤ Blank card ejected?

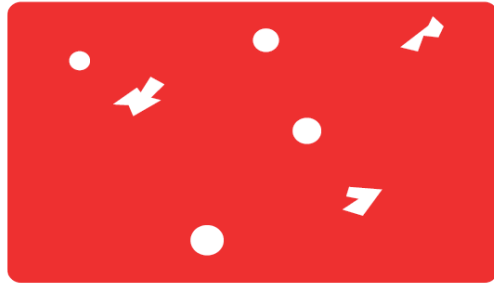
- 1 Check the ribbon and the clear Retransfer film**
Check that the ribbon is not finished or damaged. Replace it or re-install it if necessary.
- 2 The print head may be damaged**
Print a test card.
If the test card does not print, contact an Evolis reseller for technical support or visit the website at www.evolis.com.



4

➤ Poor print quality?

Small blemishes on the card



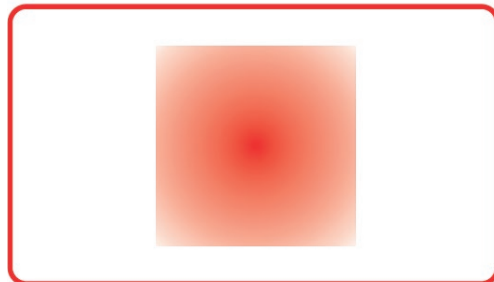
- **The card surface may be dirty.**
Check that your cards are perfectly clean.
Use new cards.
Avoid using the printer in locations with excessive dust or dirt.
- **Cleaning rollers.**
Use a cleaning card to clean the cleaning roller.

Horizontal white lines



- **The ribbon or the clear Retransfer film is not correctly fitted.**
Check that the ribbon is correctly positioned in the printer.
Check that there are no wrinkles on the ribbon surface.
- **Print head dirty or damaged.**
Contact your Evolis reseller.

Blurred image



- **The ribbon or the clear Retransfer film is not correctly fitted.**
Check that the ribbon is correctly positioned in the printer.
- **Poor ribbon synchronisation.**
Open and close the printer cover to synchronise the ribbon.
- **Dirty printer or cleaning rollers.**
- **Use of incompatible cards.**
Check that the cards used match the specifications.



***We recommend that you obtain your cards from an Evolis reseller.
Use of cards obtained elsewhere is liable to adversely affect print quality and/or damage the print head.
If problems persist, please contact your Evolis reseller.***



4

The card is bent



- Secondary transfer conditions are not optimum.
- Set secondary transfer conditions in accordance with cards used.

Print flakes off



- Secondary transfer conditions are not optimum.
- Set secondary transfer conditions in accordance with cards used.

White cards



- Only color image data was received with the Black Ribbon loaded.
- Use the overcoating color ribbon when printing in color.

4

> Partial or incorrect printing

① Check the print settings

Check that no area of the card design to be printed is outside the print margins.
Check the document orientation (portrait or landscape) in the print driver configuration.

② Check the interface cable

If irregular characters are printed, check that you are in fact using the USB cable supplied with your printer.
Check the connection between the computer and the printer.
Try using another cable of the same type.

③ Check that the printer is clean

Clean the printer, especially the cleaning rollers.
See the maintenance section.

④ Check that the cards are clean

Store your cards protected from dust.

⑤ Check the ribbon

Check that the ribbon is fitted correctly.
Check that the ribbon spools freely.

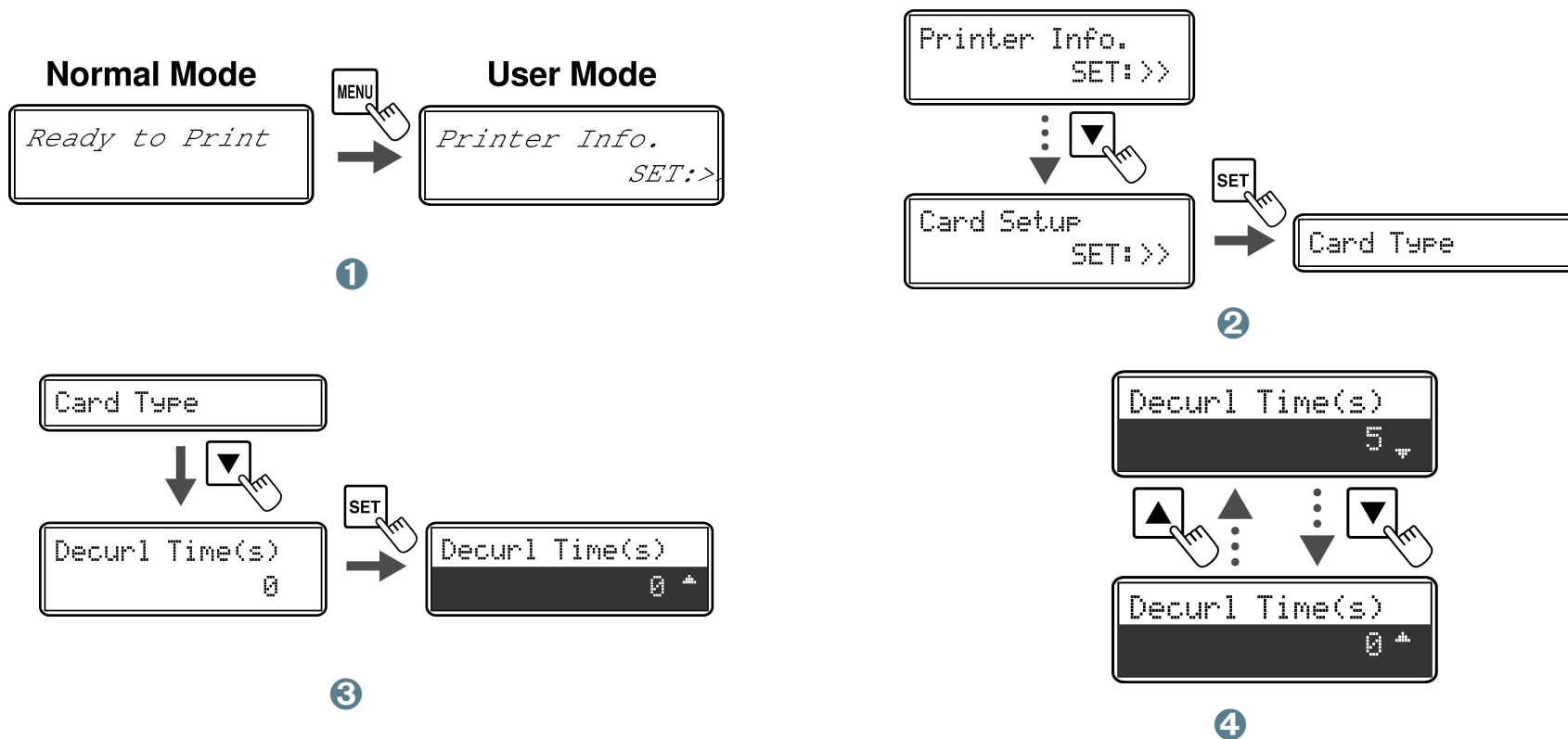
⑥ Check the print head

Should horizontal straight lines appear on printed cards, it is likely that the print head is dirty or damaged.
See the section on maintenance and troubleshooting. If the problem persists, contact an Evolis dealer or visit the website at www.evolis.com.

4

> Correcting card curl

- 1 Switch from Normal Mode to User Mode.
- 2 Press the ▼ key until [Card Setup] is displayed. Then press the SET Key.
- 3 Press the ▼ key until [Decurl Time(s)] is displayed. Then press the SET Key.
- 4 Change the settings by using the Keys. You can set the decurl duration from 0-5 seconds. There is no decurl if the settings value is set to «0».
- 5 Press the SET Key to fix the changes.



The factory default setting is «0».

You can also change the settings by using the printer driver.

Secondary transfer conditions that have not been optimized and application of excess heat are major causes of cards curling after printing. Please adjust the secondary transfer conditions.

4

4-4b FREEING JAMMED CARDS



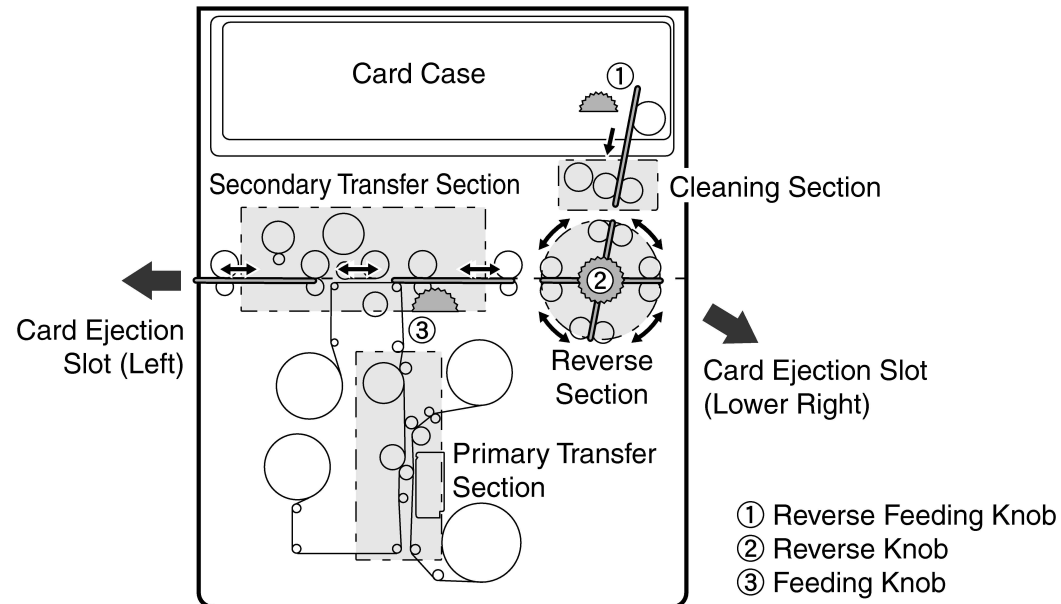
Do not turn your printer off, as this cancels pending print jobs in the printer's memory.



Never use any kind of tool (screwdriver, sharp object, etc.) to free the card. You risk causing serious damage to the rollers, especially the unit's hot roller. Any such damage will not be eligible for cover under the warranty!

To prevent card jams:

- 1 Check that the card thickness gauge is correctly adjusted.
- 2 Check that the thickness of the cards used matches the specifications set out in Appendix A "Technical specifications" in this manual.
- 3 Check that the cards are flat.
- 4 Check that the cards are not stuck together. Shuffle the cards before loading them.



4

Freeing a card in card feeder

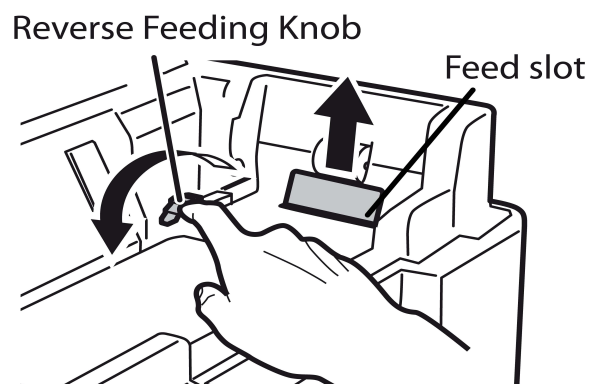
When a card becomes jammed in the card feeder, the message 'Card Jam Feeder' appears on the control panel display. Print jobs are interrupted.

Do not turn the device off, as this will result in the loss of current print jobs stored in the printer's memory.

- ① Open the top printer cover and the card feeder.
- ② Remove cards from the card feeder.
- ③ If the most right card is partially fed into the printer, slowly pull it out by hand.
- ④ Insert cards into the card feeder.
- ⑤ Close the card feeder and the printer cover.
- ⑥ Press the SET Key. The error message on the LCD panel disappears and the printer restarts.

Freeing a card in the Retransfer unit

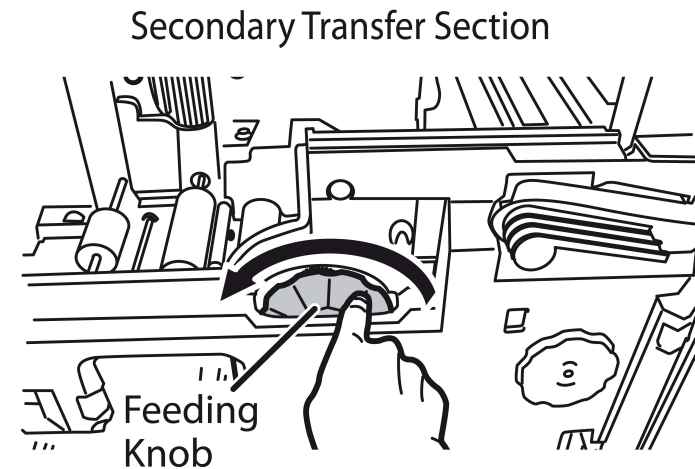
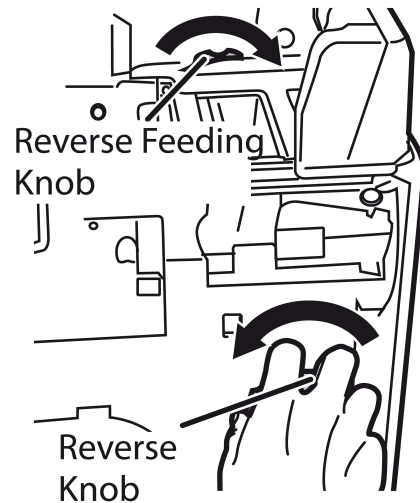
- ① Open the top printer cover.
- ② Remove the card feeder.
- ③ Rotate the reverse feeding wheel. Remove cards jammed in the cleaning section from the feed slot.
- ④ Return the card feeder and insert cards.
- ⑤ Close the card feeder and the printer cover.
- ⑥ Press the SET Key. The error message on the LCD panel disappears and the printer restarts.



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Freeing a card in the reverse section

- 1 Open the top printer cover and the front cover.
- 2 Remove the card feeder.
- 3 Release the lock on the decurl section as shown before lifting.
- 4 Remove the cleaning roller and cleaning tape cassette.
- 5 Rotate the reverse wheel and rotate the feeding wheel left or right. Cards will be ejected by the right or left ejection slot (depending on the rotation of the button).
- 6 Insert cards into the card feeder.
- 7 Before closing the top cover and front cover, return the card feeder, decurl section, cleaning roller and cleaning tape cassette to their original positions.
- 8 Press the SET Key. The error message on the LCD panel disappears and the printer restarts.



Once the card is free, make sure that the film is correctly positioned and then close the printer cover. The printer restarts.



If the Retransfer unit is too hot, turn the printer off and wait for the module to cool down (this can take several hours). Try once more to free the card manually. If, despite your best efforts, the card remains jammed, contact your Evolis reseller for on-site assistance from an engineer.

4

4-4c REPLACING THE PRINT HEAD

The print head is a sensitive component of your equipment. It determines the print quality, and regular servicing along with an immediate environment free from dust or other particles ensure a lengthy useful life. Nonetheless, the print head may sometimes need to be replaced. Evolis has designed a unique device enabling users to undertake such replacement with no tools needed, simply by following the instructions very carefully.

Before doing anything else, please contact your Evolis reseller in order to check the advisability of replacing the print head. The reseller will supply a new print head if need be.



Evolis has set up a scheme for exchanging defective print heads during the printer's warranty period. Your equipment is eligible under the scheme if:

- **You use only Evolis consumables (ribbons and maintenance products).**
- **You have followed the cleaning and servicing cycles scrupulously.**
- **You are working in a dust-free environment complying with the technical specifications.**
- **You are using flat cards, with no rough patches which could damage the print head surface.**



4

4-4d UPDATING THE FIRMWARE (under Windows)

Updating the firmware is a simple operation but one which, if not properly completed, can result in your printer breaking down. Before any update, please contact your Evolis reseller who will be able to guide you on the advisability or otherwise of carrying out an upgrade. In general, such updates are only required in the event of problem or malfunction that has been clearly identified by your Evolis reseller.

Updates can be downloaded from the website at www.evolis.com :

- ① Select your printer model, then click on the **Print drivers and Firmware** link.
- ② Then click on the file for the corresponding Firmware.
- ③ Accept the download then save the file in a directory on your hard drive. The firmware is stored compressed as a zip file, which you will need to extract.
- ④ Then double-click on the file in the directory in order to run the firmware installation program
- ⑤ When prompted by the program, click on the Download button to run the job. The firmware download is in progress.
- ⑥ After about thirty seconds, the firmware has transferred to the printer and the operation is complete.
- ⑦ If the printer is not showing a 'READY' status, this means that the update has not been carried out correctly or, possibly, that the printer is not working properly. Check the connection cables and run a new update.

The update is complete, and your equipment is ready to customise your cards.



Never interrupt the transfer between computer and printer during the download phase (powering off the printer or computer, unplugging a cable). This would result in a complete inability to restart the printer. Should such an incident occur, please contact your Evolis reseller, who will replace your printer's processing board.

4

4-4e UPDATING THE PRINT DRIVER

Updating the print driver is a task that is required in order to fix malfunctions or gain the benefit of new options.



Before any update, please contact your Evolis reseller who will be able to guide you on the advisability or otherwise of carrying out an upgrade.

Updates can be downloaded from the website at www.evolis.com :

- ① Select your printer model, then click on the Print drivers and Firmware link.
- ② Then click on the file for the corresponding print driver.
- ③ Accept the download then save the file in a directory on your hard drive. The firmware is stored compressed as a zip file, which you will need to extract.
- ④ Then double-click on the setup.exe file that you have just downloaded in order to run the installation program.



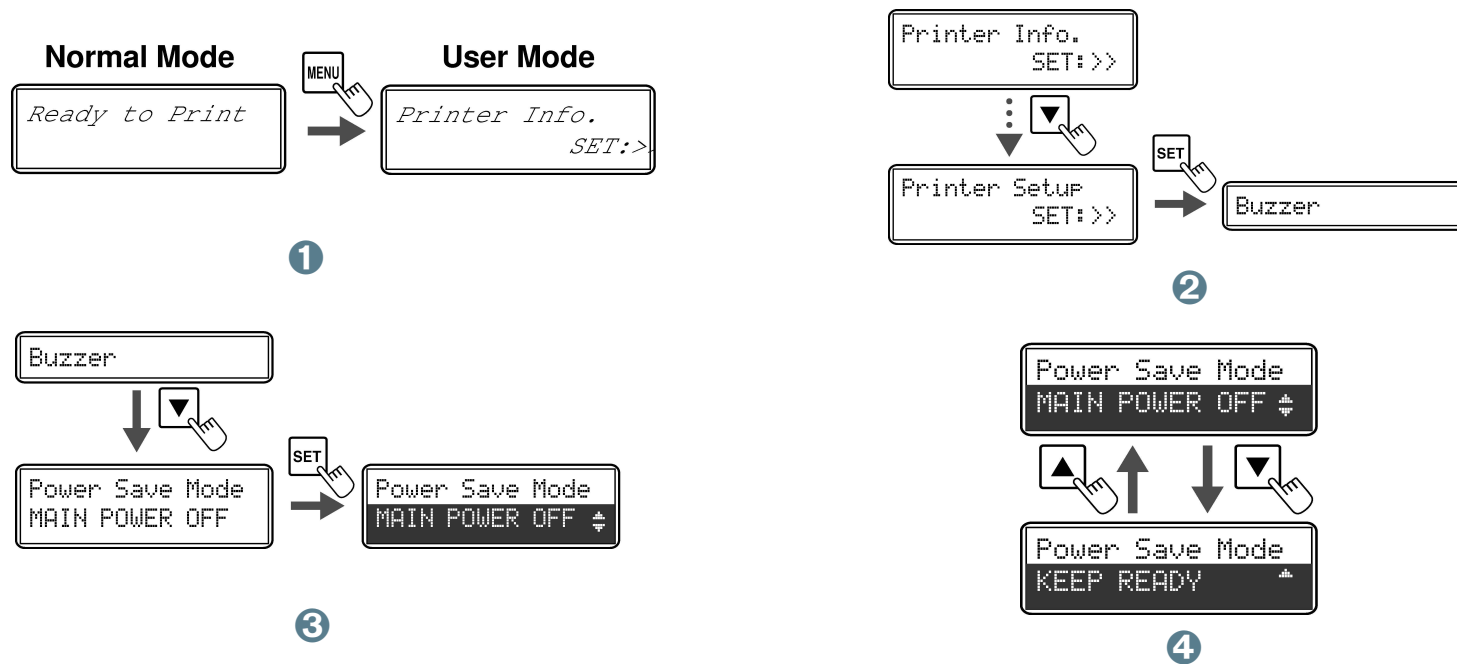
For more details about the procedure, please see the [Installing the print driver section](#).

4

4-5 Reduce printer power consumption

Select the power saving mode for when the printer is not being used.

- 1 Switch from Normal Mode to User mode (page 41 section 4.2b)
- 2 Press the ▼Key until [Printer Setup] is displayed, then press the SET Key.
- 3 Press the ▼Key until [Power Save Mode] is displayed, then press the SET Key.
- 4 Change the settings by using the ▼/▲ Keys, then press the SET Key.



HEATER OFF: If the heater is in standby for one hour, the heater will turn off.

MAIN POWER OFF: If the heater is in standby for one hour, the printer will turn off.

KEEP READY: The printer is always in a ready-to-print state. (power saving mode off)



The factory default setting is [HEATER OFF].

You can also reduce the printer power consumption on the printer driver.

4

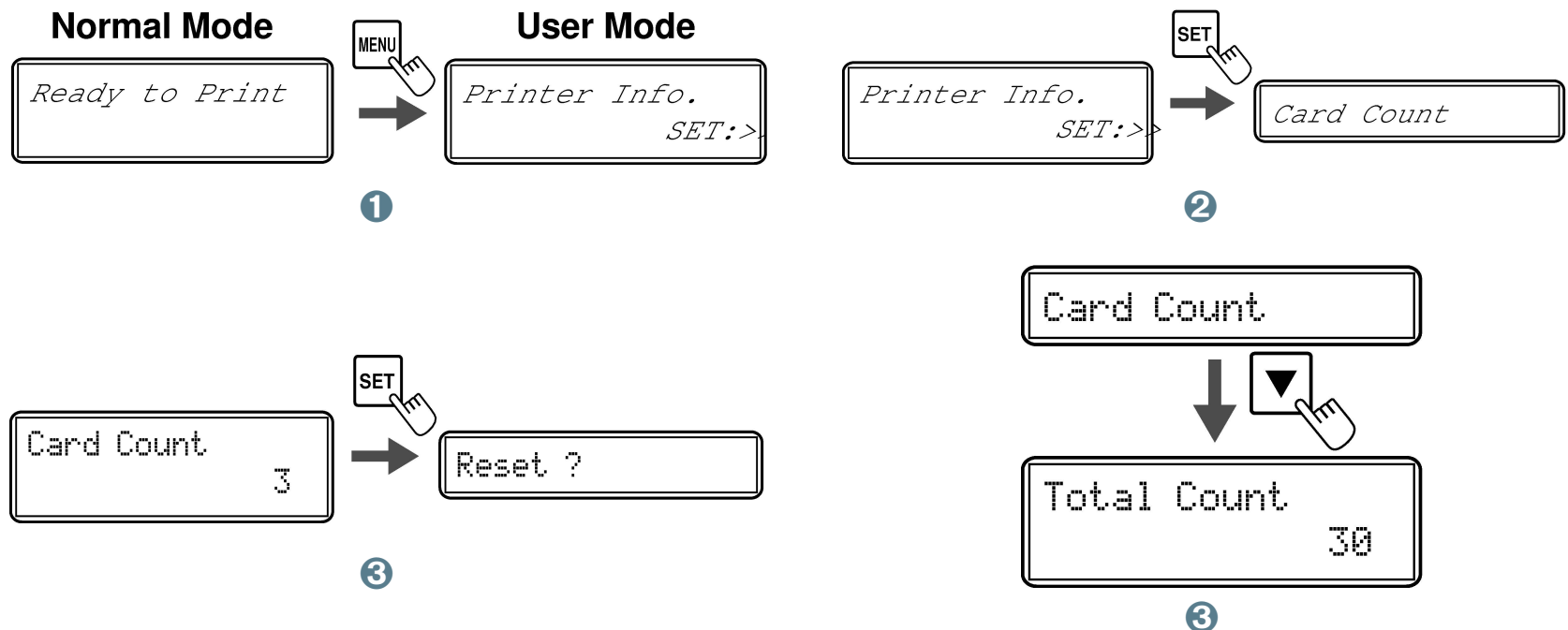
4-6 Counting the Number of cards that are printed

You can also count the number of cards that have been printed in a specified period of time by resetting the count with the SET Key.

- 1 Switch from Normal Mode to User mode (page 41 section 4.2b)
- 2 Confirm that [Printer Info] appears, and press the SET Key.
- 3 Confirm the [Card Count] display. Pressing the SET Key will return the display to [0].

You can also display the total number of sides that are printed. This can be used as a guideline for doing maintenance.

- 3 Press the ▼ Key until [Total Count] is displayed. This count cannot be reset

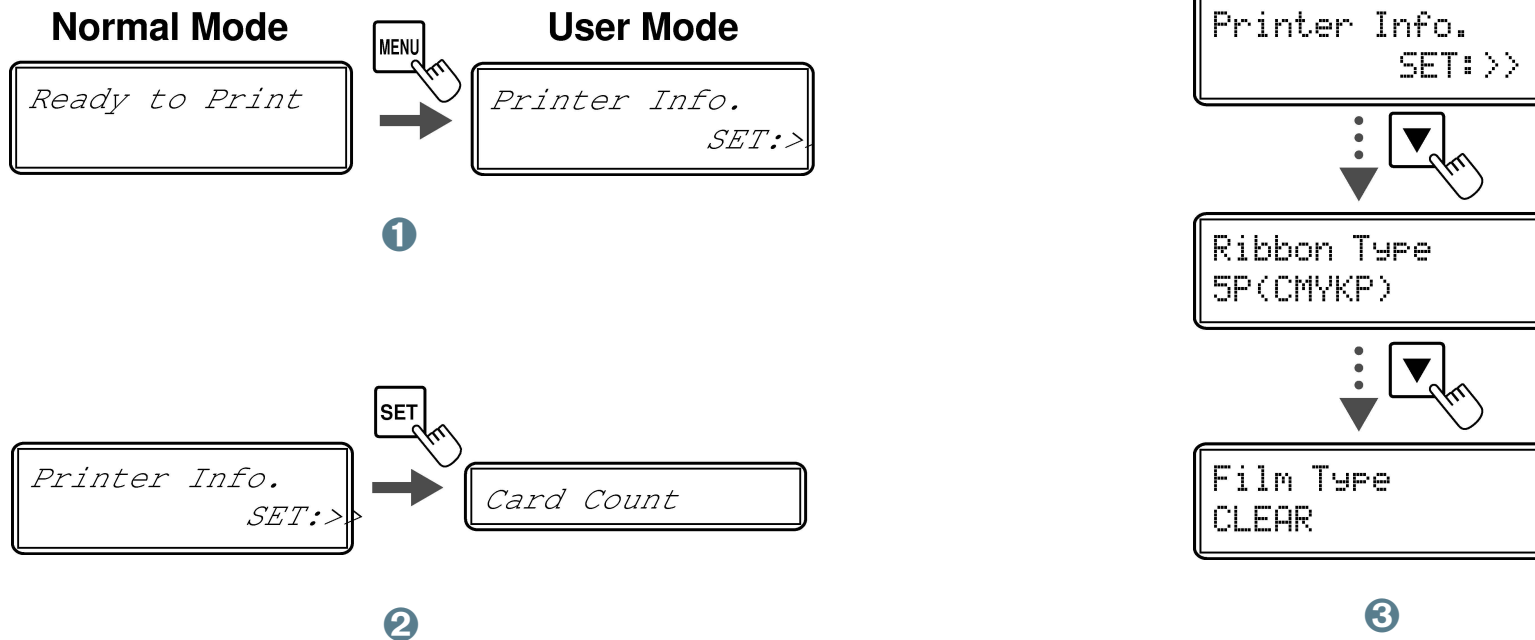


The Total count displays shows several cards have been printed when the printer is shipped from the factory because the count increases during the production process. You can also display the total count and the count of cards printed on the printer driver.

4

4-7 Checking the types of Ink ribbon and clear Retransfer film that are loaded

- 1 Switch from Normal Mode to User mode (page 41 section 4.2b)
- 2 Confirm that [Printer Info] appears, and press the SET Key.
- 3 Press the ▼ Key until [Ribbon Type] or [Film Type] is displayed.

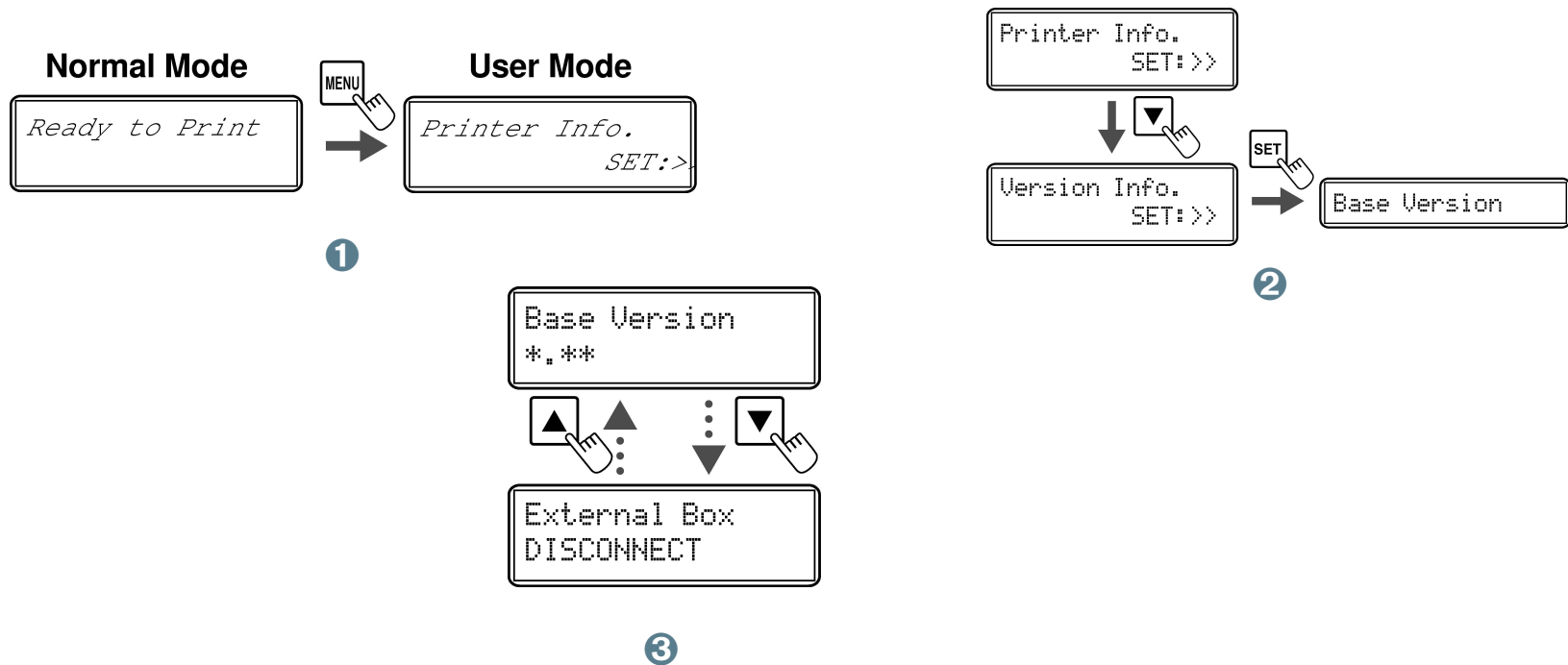


You can also check the types of ink ribbon and clear Retransfer film that are loaded on the printer driver.

4

4-8 Checking the program version and serial number

- 1 Switch from Normal Mode to User mode (page 41 section 4.2b)
- 2 Press the ▼Key until [Version Info] is displayed, then press the SET Key.
- 3 Press the ▼/▲ Keys to display the information to check.



The ▼/▲ Keys allows you to switch between [Base Version], [Main Version], [Serial Number], [Head Number], [Magnetic Encoder], [IC R/W 1], [ICR/W 2], [External Box], [Hologram Sensor].



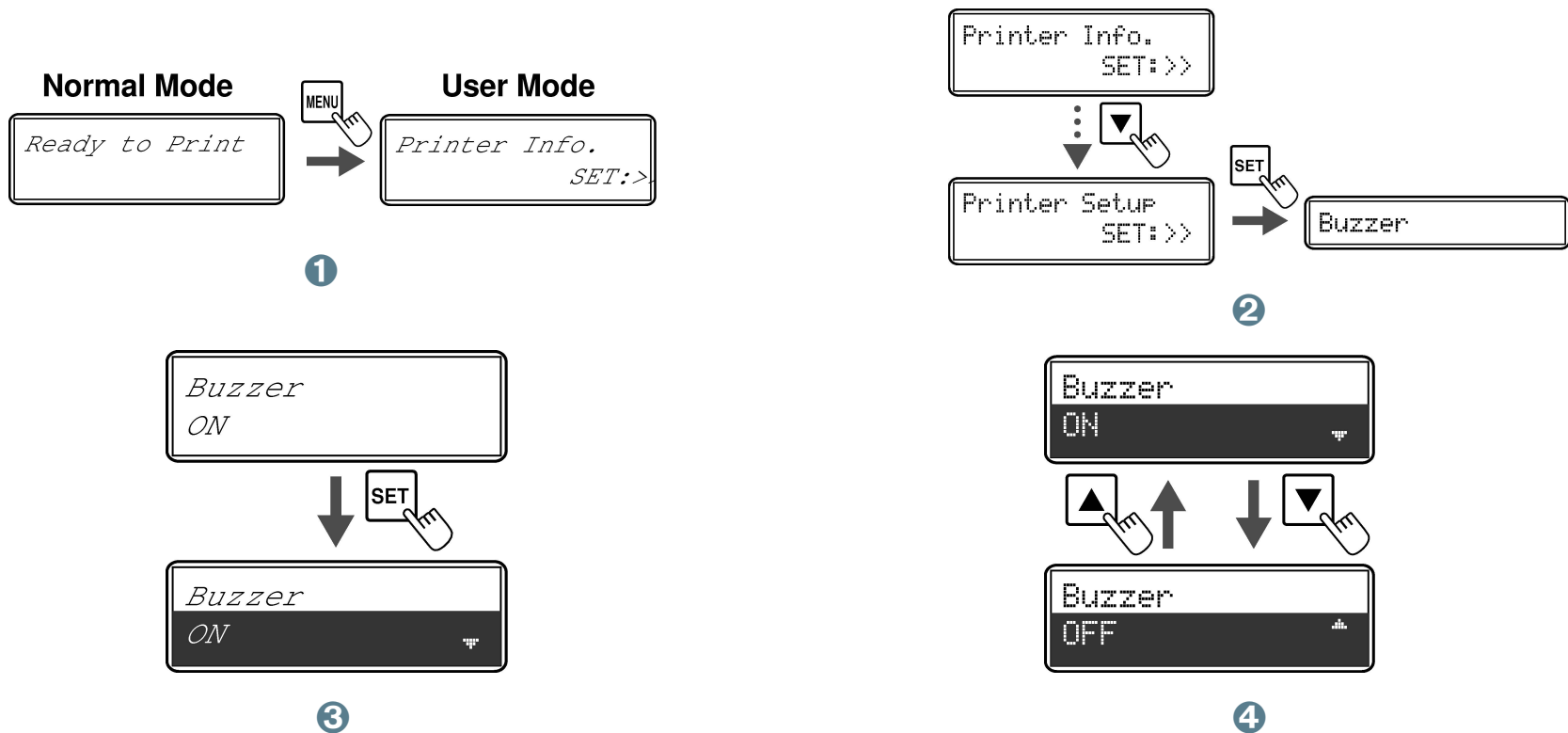
You can also check the the program version and serial number on the printer driver.

4

4-9 Turning the Error alarm ON or OFF

The initial setting is for the buzzer to sound when an error occurs. You can set the buzzer so that it does not sound.

- 1 Switch from Normal Mode to User mode (page 41 section 4.2b)
- 2 Press the ▼Key until [Printer Setup] is displayed, then press the SET Key.
- 3 Confirm that [Buzzer] appears, and press the SET Key
- 4 Change the settings by using the ▼/▲ Keys, then press the SET Key.



You can also turn the error alarm ON or OFF on the printer driver.

4

4-10 Technical support

If you are having difficulties in configuring and using your printer, read this manual carefully.

If you do not manage to solve your problem, you can obtain further information and help from the Evolis partner network.

4-10a EVOLIS PARTNER NETWORK

For any unresolved technical problem, contact an Evolis reseller. If you do not know any Evolis resellers, visit the www.evolis.com website and send us your question. Evolis will pass on the contact details of your nearest Evolis reseller. When calling an Evolis reseller, you do need to be close to your computer and ready to provide the following information:

- ① Your printer model and serial number
- ② The configuration and operating system that you are using
- ③ A description of the incident that has occurred
- ④ A description of the steps that you have taken to resolve the problem.

In addition, to enable you to find answers to your questions 24/7, the www.evolis.com website includes a number of aspects related to day-to-day use of your printer.

4-10b FINDING INFORMATION ON WWW.EVOLIS.COM

If you need additional technical help, you will find a great deal of information on using and troubleshooting Evolis printers under the **Drivers and Support** section on the Evolis website at www.evolis.com.

This section offers downloads of the latest versions of firmware, print drivers and user manuals, videos about using and maintaining Evolis printers, and an FAQ* section giving answers to the most frequently asked questions.

*FAQ : *Frequently Asked Questions*

A

Appendix A

A1 - Technical specifications

This section presents your printer's technical printing properties.

► Technical features

- Dye-sublimation reverse transfer printing
- 600 dpi print head
- USB and Ethernet TCP-IP connections
- 64 MB RAM
- Duplex (integrated flip-over)
- Detachable 250-card feeder (0.76 mm)
- 250-card output hopper (0.76 mm)
- 250-card reject hopper (0.76 mm)
- Clear Retransfer film loading guide cartridge
- Two-line LCD screen and status LEDs
- Compatible with Kensington® anti-theft devices
- RoHS compliant
- Lock for secure access to blank cards, ribbons, films and rejected cards

► Printing methods

- Colour sublimation thermal transfer
- Advanced colour management
- system Over-the-edge printing
- Double-sided printing (full color)

► Retransfer method

- Clear overlay or patch
- Double-sided Retransfer
- Throughput: 2 mm/s to 18 mm/s
- Temperature range: 100° C to 180° C



A

► Encoding options & Accessories

- Encoding options (can be combined):
 - ISO 7811 HiCo/LoCo or JIS2 magnetic strip encoder
 - Smartcard contact station - ISO 7816-2
 - Smartcard encoder and contact station – PC/SC, EMV 2000-1
 - Contactless card encoder - ISO 14443A, B, ISO 15693, Mifare, DesFire, HID iCLASS
 - Other specific encoders on request

► Print ribbon types

- YMCK – 500 images/roll
- YMCKK – 400 cards/roll

► Clear Retransfer film types

- Thin holographic overlay film, full card – 350 and 400 cards/roll
- Clear 1 mil patch – 200 cards/roll
- Clear 0.5 mil patch – 200 cards/roll
- Front-back alternating 0.5 and 1.0 mil patch – 100 cards/roll
- Thin patches and films on request: holograms, security ink, special sizes

► Printing and Retransferring speed

- Single-sided YMCK-K, patch – 43s full color 84 cards/hour
- Single-sided YMCK, patch – 25s full color 144 cards/hour

► Card management and technical data

- Card types : PVC, PET, PET-G, PC and ABS cards
- Card format : ISO CR-80 - ISO 7810 (53.98 mm x 85.60 mm) and CR-79
- Card thickness : 0.25 - 1 mm
- Retransfer on conventional PVC cards, recommended with 0.5 mil film or overlay
- No Retransfer under 0.50 mm, recommended from 0.76 mm



A

➤ Resident fonts

- Arial 100, Arial bold 100
- Barcode – Code 39, interleaved 2 of 5, Code 128, EAN13

➤ Operating systems

- Windows™ XP, Vista, W7 32/64, W8 32/64
- Other version of Windows™, MAC™ OS X, Linux on request

➤ Interface

- USB and Ethernet TCP-IP (USB cable supplied)

➤ Printer dimensions

- 16.57" (H) x 10.66" (W) x 13.03" (D) / 421x271x331 mm

➤ Printer weight

- 15 Kg (less than 33 lbs.)

➤ Power supply

- Power source: 90-125 VAC, 220-240 VAC, 50-60 Hz
- Power consumption: Less than 3A (100V)

➤ Environment

- Min/max operating temperature: 10° / 35° C
- Humidity: 20% to 80% non-condensing
- Min/max storage temperature: -20° / +60° C
- Storage humidity: from 20% to 90% non-condensing
- Operating ventilation: free air.

➤ Warranty

- Two-years (printer, Retransfer unit and hot roller) limited to 100,000 customised cards¹

¹ Warranty subject to strict compliance with specific usage and maintenance conditions and the use of Evolis consumables

B

Appendix B

B1 - Encoding options

Some models of Evolis printers are equipped with encoding systems which are used to customise magnetic strips, and contact and contactless smartcards.

Depending on the model, it is possible to install up to three types of encoder in the printer (magnetic strip, contact and contactless smartcards).

B1a - MAGNETIC STRIP ENCODING

A printer fitted with a magnetic encoder works in exactly the same way as a basic card printer. The Evolis encoder encodes the magnetic strips in a single pass then runs a data check.

Configurable as high coercivity (HiCo) or low coercivity (LoCo) by a simple click in the Windows print driver, Evolis magnetic encoders are however shipped with a default setting of high coercivity (HiCo), unless otherwise requested when placing the order.

► Location of the magnetic encoder

The magnetic encoder is a module fitted in the factory. The read-write head is located under the path taken by the cards and after the print head. The encoding sequence for a card is always carried out before the printing.



*Use only magnetic strip cards that comply with ISO 7810 and ISO 7811 standards.
The magnetic strip must be moulded into the card to work properly.
Never use cards with a glued-on magnetic strip.*



► Card positioning

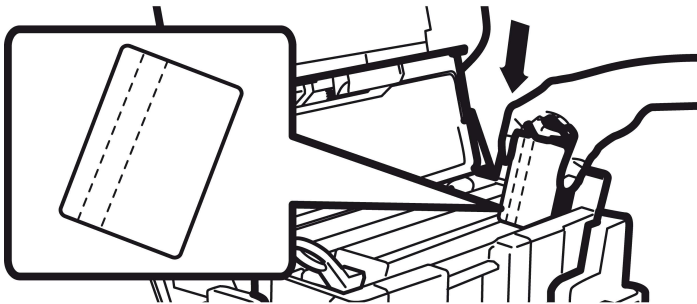
You can set the orientation of loading magnetic cards.



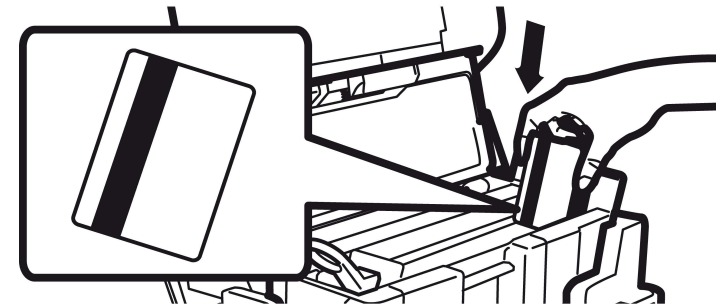
**You can also change the settings by using the printer driver.
This setting is only available when the optional encoder unit is attached.**

- ① Switch from Normal mode to User mode.
- ② Press the ▼ Key until [Card Setup] is displayed. Then press the SET Key.
- ③ Press the ▼ Key until [Set Face] is displayed. Then press the SET Key.
- ④ Change the settings [Standard] or [Reverse] by using ▼/▲ Keys, then press the SET key.

[Standard] :



[Reverse] :



- ① Open the Top cover.
- ② Open the card feeder.
- ③ Insert magnetic cards depending on the mode. Magnetic stripes are always at the right of the card feeder.
- ④ Close the card feeder and the top cover.



**The factory default setting is [Standard].
Printing on the magnetic strip terminal cannot be guaranteed.**

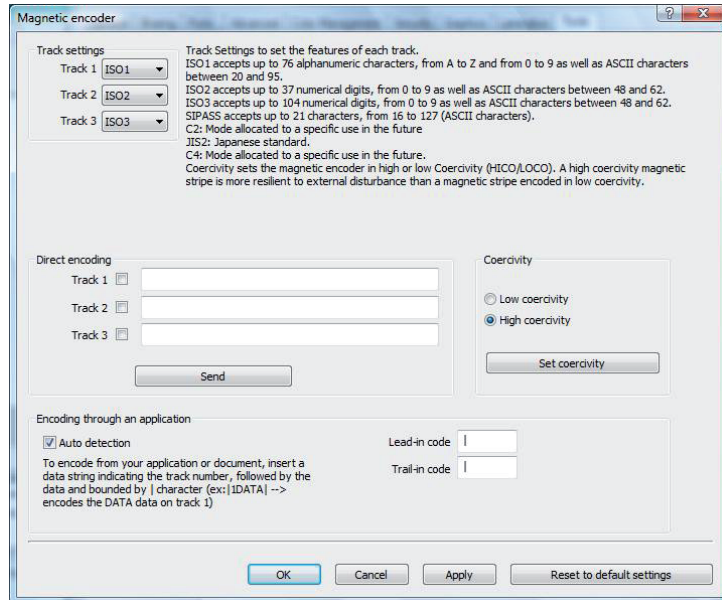


B

► Configuring the Windows print driver

When first installing the Windows print driver, the magnetic encoder functions need to be configured. The magnetic encoder functions are found in the print driver's Tools dialogue box by clicking on the Encoding Settings button.

► “Magnetic Encoder” dialogue box



The **Magnetic Encoder** dialog box opens when the **Encoding Settings** button is selected.

Track settings is used to select the desired ISO standard for each magnetic strip. See the table in this Appendix for information regarding ISO 7811 standards.

Coercivity sets the magnetic encoding to high (HiCo) or low (LoCo) coercivity. A magnetic strip that is encoded in high coercivity is more resistant to external disturbance than a magnetic strip encoded using low coercivity.

Direct encoding is used to directly encode one or more magnetic strips from this window simply by selecting them and entering the data to be encoded. Click on the “Send” button (previously “execute encoding”) to run the encoding cycle.

Automatic extraction is used to encode magnetic strip cards from applications under Windows (such as Word for example). A text field enclosed within “|” and “|” characters (or some other character which the user can define) will be interpreted as an encoding command by print driver.

► Cleaning the magnetic encoder

The magnetic encoder head requires regular maintenance in order to ensure the integrity of the data encoded onto cards.

Cleaning of the magnetic encoder is carried out when the printer runs a cleaning sequence with impregnated cards (see the “Maintenance” section of this manual for further information).

Repeatedly running the cleaning card through the printer cleans the card feed rollers, the cleaning rollers, the print head and the magnetic encoder read-write head.

If, in between two routine printer cleaning runs (every 1000 cards inserted), the read-write process fails with more than one card, it is recommended to run a printer cleaning sequence manually (please see the “Maintenance” section of this manual for the procedure to follow).



B

► ISO 7811 magnetic encoding standards

Track number	Separator	Density	Character set	number of characters
Track 1	^	210 ppp ¹	Alphanumeric (ASCII 20-95) ²	79 ³
Track 2	=	75 ppp ¹	Numeric (ASCII 48-62) ²	40 ³
Track 3	=	210 ppp ¹	Numeric (ASCII 78-62) ²	107 ³

¹ bits per inch

² Except for the "?" character

³ Including the Start, Stop and LRC characters which are automatically handled by the magnetic encoder

B

B1b - CONTACT SMARTCARD ENCODING

A printer fitted with a smartcard contact station works in exactly the same way as a basic card printer. The Evolis smartcard contact station is used to program chips to ISO 7816-2 standards.

► Contact station location

The contact station is a module fitted in the factory. It is located over the path taken by the cards and before the print head. To make contact with the station, the smartcard is positioned underneath it and is pushed mechanically upwards. The programming sequence for a smartcard is always carried out before the printing.



**Use only smartcards compliant with the ISO 7816-2 standard.
Never print over the chip.**

► Card positioning

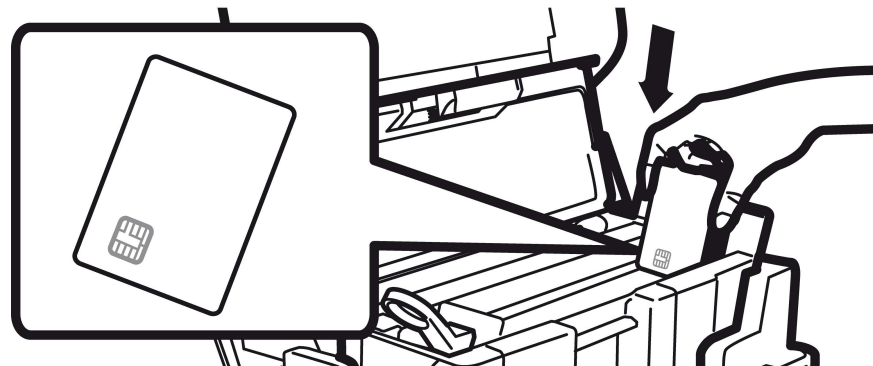
Before loading IC cards, you need to set the orientation of cards.



The factory default setting is [Standard].

- 1 Switch from Normal mode to User mode.
- 2 Press the ▼ Key until [Card Setup] is displayed. Then press the SET Key.
- 3 Press the ▼ Key until [Set Face] is displayed. Then press the SET Key.
- 4 Change the settings [Standard] or [Reverse] by using ▼/▲ Keys, then press the SET key.

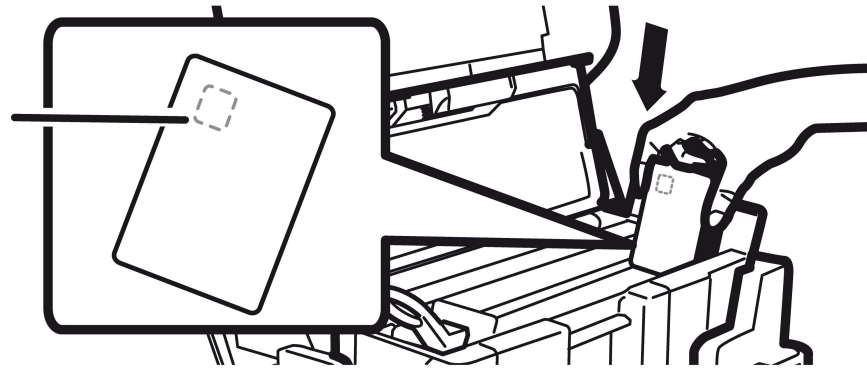
[Standard] :



B

[Reverse] :

*The IC terminal
is on the back
side of card*



- 1 Open the Top cover.
- 2 Open the card feeder.
- 3 Insert IC cards depending on the mode. The IC cards should be always positioned with the IC terminal near the cover top.
- 4 Close the card feeder and the top cover.



Printing on the IC terminal cannot be guaranteed.



B

DB-9 connector pins	Smartcard contact points
1	C1 : Vcc
2	C2 : RST, Reset
3	C3 : CLK, Clock
4	C4 : Reserved
5	C5 : GND, Ground
6	C6 : Vpp
7	C7 : I/O, Input/Output
8	C8 : Reserved
9	C9 : OPTO+, Card detection signal

A sequence of commands must be sent via the printer's interface to insert a card into the printer then position it under the station and establish contact.

The command sequence is as follows:

Sending the SIS sequence:

- A card is moved from the feeder to the contact station, and stops underneath it.
- The card is pushed upwards to make contact with the station.
- The printer connects the contact station to the DB-9 connector.
- The chip is programmed via the computer's serial interface and the external coupler.



Refer to the Evolis printer Programming Guide for further details on programming smartcards.

The Evolis product catalogue has printers equipped with a chip contact station and a built-in encoder. Depending on the model, these encoders connect to the PC via a USB interface.

B1c - CONTACTLESS SMARTCARD ENCODING

Evolis printers may be equipped with an encoding device for contactless smartcards (RFID). This consists of an encoding module and sometimes a detachable antenna.

Integration of such a module must be carried out by specialist. The Evolis product catalogue has printers equipped with a built-in encoder for contactless chips.

Depending on the model, these encoders connect to the PC via an RS-232 interface (DB-9 socket) or a USB interface.

There is a very wide variety of contactless cards, and each card has specific technical properties associated with an equally specific type of encoder. See your Evolis reseller for further information.

► Location of the antenna (or the encoder including an antenna)

By means of a specific command, the card is positioned close to the antenna such that the card lies within its radio range.

Reading data from or writing data to the card can then start.

The programming sequence for a smartcard is always carried out before the printing.

► Card positioning

On the face of it, there are no restrictions on card positioning when programming in contactless mode.

However, the miniaturisation of components is bringing about the emergence of cards fitted with mini-antenna.

In this situation, please see your card supplier for further information about where such mini-antenna are located within the card, so as to present the card as close as possible to the encoder's antenna. Doing so will ensure optimum encoding of the cards.



B

► Computer connection

The encoder is integrated inside the printer, to connect it to your computer you just have to plug the USB cable from your printer to your computer.

DB-9 connector pins	RS-232 signals (serial)
1	Not used
2	RxD
3	TxD
4	Not used
5	Not used
6	Not used
7	RTS
8	CTS
9	Not used

A sequence of commands must be sent via the printer's interface to insert a card in the printer then position it close to the antenna to establish radio communication between the card and the encoder.

The command sequence is as follows:

Sending the SIC sequence:

- A card is moved from the feeder towards the antenna and is positioned nearby.
- The chip is programmed via the computer's serial (or USB) interface connecting the built-in encoder and the computer.



Refer to the Evolis printer Programming Guide for further details on programming contactless smartcards.

Appendix C

C1 - Certifications

C1a - IC Regulations

Canada, Industry Canada (IC) Notices

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210.

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Canada, avis d'Industry Canada (IC)

Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210.

Son fonctionnement est soumis aux deux conditions suivantes:

- (1) cet appareil ne doit pas causer d'interférence et
- (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement

► (RSS-Gen §7.1.3)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

For Canada

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



► (RSS-Gen §7.1.2)

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

► (RSS-102)

IMPORTANT NOTE: Radiation Exposure Statement

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power Wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure of low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research. This device (WNA1100) has been tested and found to comply with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules.

Les connaissances scientifiques dont nous disposons n'ont mis en évidence aucun problème de santé associé à l'usage des appareils sans fil à faible puissance.

Nous ne sommes cependant pas en mesure de prouver que ces appareils sans fil à faible puissance sont entièrement sans danger. Les appareils sans fil à faible puissance émettent une énergie radioélectrique (RF) très faible dans le spectre des micro-ondes lorsqu'ils sont utilisés. Alors qu'une dose élevée de RF peut avoir des effets sur la santé (en chauffant les tissus), l'exposition à de faibles RF qui ne produisent pas de chaleur n'a pas de mauvais effets connus sur la santé. De nombreuses études ont été menées sur les expositions aux RF faibles et n'ont découvert aucun effet biologique. Certaines études ont suggéré qu'il pouvait y avoir certains effets biologiques, mais ces résultats n'ont pas été confirmés par des recherches supplémentaires. WNA1100 a été testé et jugé conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles d'exposition aux fréquences radioélectriques (FR) RSS-102 de l'IC.



C1b - FCC Regulation

► FCC part 15.21 of Information to user

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

Alterations or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment

► FCC part 15.105(b) of Information to user

Note: 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 try to correct the interference by one or more of the following measures:

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