



## **Tattoo Rewrite Information Guide**

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## Introduction

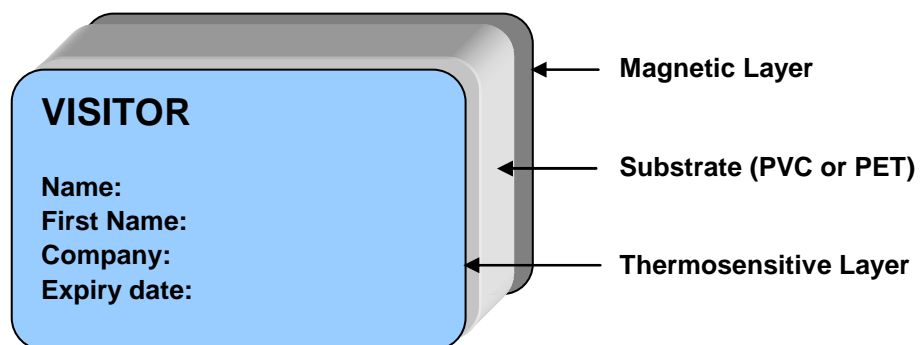
The Tattoo Rewrite is designed to print on rewritable cards, allowing erasing and reprinting on the same card up to 500 times. It will complement the current Evolis Tattoo printer range and open new markets as well. Rewritable cards are very popular in Japan and other Asiatic countries where they are used in many Point of Sales applications. These cards are just emerging in Europe where there is only one manufacturer of related printers.

However a few distribution chains are pioneering the concept and this market is expected to grow significantly within two/three years. Evolis has decided to anticipate this growth by proposing a dedicated product. The Tattoo REWRITE is derived from the current Evolis Tattoo and looks very similar, but the printing process is completely different.

## Rewritable card technology

In the rewritable card technology, no ribbon is used to print on the card. The card itself includes a thermo-sensitive material which becomes visible when heated at a temperature of ~180°C, followed by rapid cooling. When a lower temperature is applied, typically between 110°C and 160°C, the colour disappears. This is due to the presence in the material of two chemical substances which combine together at certain temperature. The heat can be applied by a thermal printhead such as the ones used in Evolis printers. This process is reversible and the same card can be erased and printed again up to 500 times.

The thermo-sensitive material is laminated on plastic substrate to make cards. Most common substrates are PVC for 30 mil card or PET for 10 mil cards. PVC cards can be manufactured with magnetic stripes and contactless chips which enable sophisticated applications. PET cards often include a magnetic layer on the side opposite to the rewritable one.



# Key selling points

- **Cost savings**

- No ribbon cost
- Reusable cards (up to 500 times)

- **Excellent marketing tool**

- Makes the ever-changing marketing strategies more successful
- Latest promotions printed on cards
- Ideal for one-to-one marketing campaigns
- Help corporations to acquire, retain and develop their customer base
- Readable by the human eye - Interactive with customers

- **Quick update capability**

- Data can be modified on the spot whenever needed

- **Vast number of market applications**

- Can be coupled with magnetic stripe and contactless chip

# Markets & applications

The market for the Tattoo Rewrite is defined by rewritable cards applications. A rewritable card is required when the information printed on it needs to be updated. This is typically the case in loyalty programs with bonus points or special offers printed directly at the point of sale after each transaction. Rewritable cards can also help to reduce costs, by allowing reusing the same card at different times for a given user (electronic ticketing) or for different users (students or visitors cards). By combining rewritable material with contactless chips, the card can be given sophisticated features to suit high end applications.

## Customer's loyalty

Customer's loyalty programs are the visible part of customer relationship management (CRM) efforts. These combine various techniques such as sales force automation, data warehousing, data mining, and segmentation/qualification of customers. Their ultimate goal is to identify and keep the best customers by tailoring dedicated offers.

With rewritable cards, the offers/rewards remain visible to customers after each transaction, which reduces churn and translates into additional revenues. Immediately visible information can also increase the impact of one-to-one communication, reduce advertising costs and help pushing product through the channel.

## Visitor's management

Rewritable cards replace existing badges used for visitors and temporary staff. In sophisticated applications, the card will include contactless chips allowing identification of the holder and giving access to specific areas of the building. The printer is then part of the visitor management system, including software, visitor database, card readers...

The key advantages of rewritable cards are the reusability which allows reducing the overall cost, the better image offered to the visitors and the environmental considerations.

## Schools

One of the most popular applications in Europe: student cards are updated every semester to extend validity and to show the program followed by the holder. The card can also give access to library, canteen, parking or other premises. Another application is childcare programs: ID cards for children and the persons entitled to pick them up after school.

## Libraries

The card will show the list of borrowed books with return dates. This list is otherwise printed on a paper ticket, which is more likely to be lost.

## Healthcare

Used in hospitals, the card carries medical information about the patient and examinations to be performed. Rewards programs for donors increase the frequency of blood donations.

## Appointment cards

Valid for many professional services: hairdressers, dentists, driving schools... The card shows the date of the next appointment, resulting in less appointment being forgotten and less working hours being lost.

## Movies

Prepaid cards with holder ID: expiry date and remaining number of movies can be updated.

## Canteens

Prepaid cards showing the remaining money will speed up the refilling of holder's account.

## Gaming

Prepaid cards for electronic points of game will show rewards directly on the card.

## Transportation

Popular for ski passes, the rewritable cards can also be used for underground, railways or busses, with subscription rights updated on a monthly or quarterly basis.

## Logistics

In addition to item traceability in factories or warehouses, rewritable cards can be used for repeated one-time deliveries (pizza, flowers) with customer address, phone number, payment terms and roadmap.

# Technical information

## ■ Products specifications

The Tattoo Rewrite range includes four versions: Basic, Mag, Contactless and Contactless Mag. Preliminary specifications are listed in the chart below.

Additionally, the Tattoo Rewrite can be In proposed in Stand-Alone or Loyalty versions. These versions are not part of the standard range, but can be delivered upon request.

<b>Print mode</b>	Monochrome direct printing (black or blue) - erasable & rewritable Line mode for text, barcode, logo printing Dithering mode for image/photo printing
<b>Printer features</b>	Automatic card thickness adjustment Automatic card loading from feeder or hand-feed Standard card feeder, capacity: 100 cards (30 mil) or 300 cards (10 mil)
<b>Printing features</b>	Print speed: 180 cards/hour Erase/print cycle: 8" (fastest) Print resolution: 300 x 300 dpi Maximum print area: 48 x 80 mm (1,90" x 3,15")
<b>Card types</b>	Base material: PVC, PET (rewritable) and paper (direct thermal) Format: ISO CR-80 / ISO 7810 - 53.98 x 85.60 mm (2.12" x 3.37") Thickness: from 0,25 mm (10 mil) to 0.76 mm (30 mil) [max: 0,85 mm] Number of erase/rewrite cycles per card: up to 500
<b>Drivers, software</b>	Windows 95, 98, Me, NT 4.0, 2000 and Xp Resident barcodes: Code 39, Code 2/5 interleaved Resident fonts: Arial normal 100, Arial bold 100
<b>Connections</b>	USB and Centronics interfaces, RS 232 on request
<b>Other printer models</b>	Tattoo Rewrite Mag with magnetic encoding: 3 tracks, HICO or LOCO - ISO 7811 Tattoo Rewrite Contactless with contactless card coupler - ISO 14443A / MIFARE
<b>Warranty</b>	Printer: 1 year <sup>1</sup> Printhead: 1 year <sup>1</sup>
<b>Electrical</b>	External power supply: 110~230 VAC, 60~50 Hz
<b>Ship kit</b>	CD drivers, cleaning kit, cables, user's guide
<b>Environment</b>	Operating temperature: 15/30°C (59/86°F) Operating humidity: 20 to 65% without condensation Storage temperature: -5/+70°C (23/158°F) Storage humidity: 20 to 70% without condensation
<b>Dimensions &amp; weight</b>	Height: 166 mm (6.52") Length: 290 mm (11.42") Width: 187 mm (7.36") Weight: 2,5 Kg (5.5 lbs)
<b>Regulatory compliance</b>	Safety: CE mark (EN 60950) EMC: CE mark B-Class / FCC B-Class

<sup>1</sup> - Clause governing the use of Evolis approved supplies, subject to observance of cleaning procedures

## ▪ **Rewritable cards**

The Tattoo Rewrite is compatible with rewritable cards of thicknesses from 10 to 30 mil. Evolis will propose blank rewritable cards with optional magnetic stripes. PVC based cards can be personalised with Evolis printers on the non rewritable side. This side can also be printed with conventional offset techniques in case of bigger quantities. Additionally, PVC cards can be manufactured with contactless chips.

The rewritable side can also be customised but it has to be done at manufacturing stage. If you need a colour image on this side, please contact Evolis Sales Representatives.

The same card can be erased and printed again up to 500 times. Exact values for the various types of cards will be notified in Evolis documentations.

## ▪ **Printing operations**

Because of the thermo-sensitive material, no ribbon is required to print on the cards. It will not be possible to install a ribbon in the production units of Tattoo Rewrite.

Windows applications or eMedia files can be printed on rewritable cards using the Tattoo driver. There is no restriction to the area to be printed, however printing outside the print margins is not guaranteed. The driver will apply the best printing parameters to the various types of cards. Please check with Evolis for exact printer's settings.

Sufficient time shall be left for the card to cool down before reprinting on it. Otherwise, one may observe partial erasing of the previous image. Generally a few seconds will be enough. Similarly the best contrast is achieved a few seconds after the card has been printed.

Warped cards can result in a slightly reduced printing area. This is more likely to happen with thick cards. In this case, reprinting the card several times will generally solve the issue. However heavily bended cards might prove impossible to print.

New cards shall be kept in a safe and clean environment, for instance in the standard card feeder. Dusty or dirty cards might cause uneven or incomplete printing. In this case, please perform the recommended cleaning operations.

## Product Advantages

With respect to competition products, the Tattoo Rewrite offers both the highest resolution and largest printing area. The same printer accepts a wide range of cards, with standard card feeder and automatic card thickness detection. Its price, user friendliness, flexibility and innovative design make it an ideal solution for integration into clients' applications.

- **High standard resolution : 300 dpi**

300 dpi means a better printing quality compared to 200 dpi competition products.

- **Large printing area : 48 x 80 mm (1.90" x 3.15")**

The large printing area, well over competition, allows greater freedom in card design. More information and graphics elements (logo, barcodes) can be put on the card.

- **Printing speed : 180 cards per hour**

The throughput of 180 cards per hour is achieved thanks to the printhead fan cooler. This frequency takes also into account the data transmission time. For a single card, erase/print cycle can be as fast as 8 seconds.

- **Standard card feeder : 100 cards (30 mil)**

The standard feeder keeps new cards in a safe and clean environment. The printer manages manual loading from the front side and automatic loading from the card feeder.

- **Cost effective solution**

The Tattoo Rewrite is the most cost effective solution available in its category.

# Competitive Analysis

## ▪ CLEARJet

The Austrian company, founded in 1993, was the first to introduce the concept in Europe. Its current CX-one product has a fair level of integration despite the bulky housing. The printer has optional magnetic encoder, chip coupler, barcode reader and card hopper.

- High price positioning
- 200 dpi standard resolution
- Smaller printing area (48 x 76 mm)
- No standard card feeder
- 150 cards per hour

## ▪ Star Micronics

The Japanese company markets the TCP printer range. The small footprint and built in power supply make them easy to install, despite the complicated interface connections. Star printers are distributed mostly in Asia and to a small extent in the USA and Europe.

- Limited card thickness range by printer
- Smaller printing area (40 x 68 mm)
- 200 dpi standard resolution
- No standard card feeder
- No contactless option

## ▪ Panasonic

Looking similar to Star ones, these printers are designed by the famous Matsushita consumer electronics subsidiary. These are also distributed mostly in Asia.

- Limited card thickness range by printer
- Smaller print area (40 x 56 mm)
- 200 dpi standard resolution
- No standard card feeder
- No USB interface



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