

Technical Bulletin

ExpressCard 2000 Image Margins

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Table 1.1 - Revisions

Rev Number	Date	Notes
1.01	6/26/2013	Initial Release

1 Introduction

The image printing feature of the ExpressCard 2000 (EC2000) allows applications to print monochrome or color images on the front and rear of cards. This technical bulletin explains the image printer's use of margins at the edges of cards, and provides instructions for experimenting with narrowing or widening the margins in a way that is appropriate to a specific card personalization application.

2 About Image Margins

When issuing cards with edge-to-edge images, the width of the margins on the edges of the card is a tradeoff between two factors: Customers may desire the thinnest possible margins, but if the print head prints too close to the edge of a card, the printer ribbon may break. "Safe" margin widths depend on the ribbon type and the specific images and card stock used by the application; the image printer is pre-calibrated to minimize the margins without breaking ribbons in a majority of applications.

When possible, MagTek recommends using card layouts that are optimized for instant issuance, rather than re-using designs intended for pre-lithographed stock and trying to eliminate the margins by printing too close to the card edges and risking ribbon breakage. Recommended design techniques include:

- Including the margins as part of the design, such as fading images to the card stock color at the edges;
- Pre-lithographing border areas, including the margins;
- Pre-lithographing all areas that are not personalized. Designs of this type should account for printer variances by planning either overlaps or gaps between pre-lithographed areas and printed images.

Depending on the application, it may be possible to narrow the margins beyond the factory settings by issuing direct commands to the printer until the ribbon breaks with the application's most sensitive (break-prone) card design, then widening the margin adjustment by a few pixels.

The margin sizes are based on four values:

- The X (left-right) position of the image relative to the left edge of the card;
- The Y (up-down) position of the image relative to the top of the card;
- The X size (length) of the image, with additional rows added at the right edge of the card;
- The Y size (width) of the image, with additional rows added at the bottom edge of the card.

3 How to Minimize Image Margins

To minimize the image printer's unprinted margins, follow these steps:

- 1) Navigate to **Menu** > **Settings** > **Printer** > **Advanced** to open the **Printer Utility** page.
- 2) Press the **Print Tech Card** button and follow any on-screen instructions to print a card that shows the current image printer settings, which you will use later in this process. The first two values of the "X-Y-Smart Offsets" row provide the current **Rx** and **Ry** settings, and the "Printed Lines L/W" line provides the current **Rnl** and **Rnw** settings.
- 3) Press the **Commands...** button to open the **Printer Utility** page.
- 4) Select the **Command** text box. Use the on-screen keyboard and the **Send** button to send all the commands in the following steps to the image printer, and monitor the printer's responses in the **Response** text box. **Note: Commands are case-sensitive! You must use the shift key to capitalize the first letter of each command.**
- 5) Lower the X (left-right) position of the image on the card by following these steps:
 - a) Use the **Rx** command to read the current setting for the X position.

- b) Use the **Px;=;number** command, where **number** is 1-4 steps smaller than the X value reported by **Rx**, to bring the left edge of the image closer to the left edge of the card.
 - c) Create a set of test cards that represent the full range of the application's images.
 - d) If test cards are created successfully, repeat the process of lowering the X position.
 - e) If the ribbon breaks or the printer produces blank cards, raise the value closer to where it was to start, and re-try test cards until they are created successfully.
- 6) Increase the X size (length) of the image on the card by following these steps:
- a) Use the **Rnl** command to read the current setting for the X size.
 - b) Use the **Pnl;=;number** command, where **number** is 1-4 steps larger than the original value reported by **Rnl**, to add rows to the right edge of the image, bringing it closer to the right edge of the card.
 - c) Create a set of test cards that represent the full range of the application's images.
 - d) If test cards are created successfully, repeat the process of increasing the X size.
 - e) If the ribbon breaks or the printer produces blank cards, lower the value closer to where it was to start, and re-try test cards until they are created successfully.
- 7) Raise the Y (up-down) position of the image on the card by following these steps:
- a) Use the **Ry** command to read the current setting for the Y position.
 - b) Use the **Py;=;number** command, where **number** is 1-4 steps smaller than the Y value reported by **Ry**, to bring the top edge of the image closer to the top edge of the card.
 - c) Create a set of test cards that represent the full range of the application's images.
 - d) If test cards are created successfully, repeat the process of raising the Y position.
 - e) If the test cards show wrinkled edges or other problems, raise the value closer to where it was to start, and re-try test cards until they are created successfully.
- 8) Increase the Y size (height) of the image on the card by following these steps:
- a) Use the **Rnw** command to read the current setting for the Y size.
 - b) Use the **Pnw;=;number** command, where **number** is 1-4 steps larger than the original value reported by **Rnl**, to add rows to the bottom edge of the image, bringing it closer to the bottom edge of the card.
 - c) Create a set of test cards that represent the full range of the application's images.
 - d) If test cards are created successfully, repeat the process of increasing the Y size.
 - e) If the test cards show wrinkled edges or other problems, lower the value closer to where it was to start, and re-try test cards until they are created successfully.