



**Datacard® Card Issuance Systems
MX2100™, MX6100™, and MX8100™**

Operator's Guide

July 2015

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Notice

Please do not attempt to operate or repair this equipment without adequate training. Any use, operation or repair you perform that is not in accordance with the information contained in this documentation is at your own risk.

These products conform to regulatory requirements as specified in North America, Europe, and Asia. Refer to “Regulatory Compliance” on [page iv](#) for more information.

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Compliance Statements

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Safety

All Datacard® products are built to strict safety specifications in accordance with CSA/UL60950-1 requirements and the Low Voltage Directive 2006/95/EC.

Therefore, safety issues pertaining to operation and repair of **Datacard®** equipment are primarily environmental and human interface.

The following basic safety tips are given to ensure safe installation, operation, and maintenance of **Datacard** equipment.

- Connect equipment to a grounded power source. Do not defeat or bypass the ground lead.
- Place the equipment on a stable surface (table) and ensure floors in the work area are dry and non-slip.
- Know the location of equipment branch circuit interrupters or circuit breakers and how to turn them on and off in case of emergency.
- Know the location of fire extinguishers and how to use them. ABC type extinguishers may be used on electrical fires.
- Know local procedures for first aid and emergency assistance at the customer facility.
- Use adequate lighting at the equipment location.
- Maintain the recommended temperature and humidity range in the equipment area.

Regulatory Compliance

Notice for USA (FCC notice)

This equipment has been tested and found to comply with the limits for Class A computing devices, pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with this instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

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This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

RSS-Gen, Issue 3, December 2010, Section 7.1.3 User Manual Notice

This Device complies with Industry Canada License-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.

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The EU Declaration of Conformity can be found on **Datacard.com**

We hereby certify that this printer complies with EMC Directive 2004/108/EC, R&TTE Directive 1999/5/EC, and the EU RoHS Directive EU Directive 2011/65/EC. This printer conforms to Class A of EN 55022 and to EN 301 489-5. Operation of this equipment in a residential environment may possibly cause interference. In the event of interference, the users, at their own expense, will be required to take whatever measures are necessary to correct the problem.

Notice for Europe and Australia

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

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警告

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這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採用某些適當的對策。

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Revision Log

MX2100, MX6100, and 8100 Owner's Manual

Revision	Date	Description of Changes
A	March 2013	First release of this document
B	October 2013	Added the MX8100 system, Secure Indent module, Label Module - HS, High-Capacity Input module, Input module - HS, High-Capacity Output module, Dual Head Graphics module, and Dual Head Magnetic Stripe module.
C	January 2014	Added the Vision Verification Gen 2 module.
D	August 2014	Updated the routine maintenance instructions. Added a new routing label for the Label Module - HS. Updated the audible noise specs for the MX6100/8100 systems. Added a procedure for loading cards into the High-Capacity Input module.
E	July 2015	Added Artista VHD Retransfer Color Printing Module Gen 2.

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Chapter 1: Introduction



This chapter provides general information related to the MX Enhanced Series systems, which include the MX2100, MX6100, and MX8100.

System Overview

The MX systems offer a series of modules that work together to print elements on cards. The following table describes each possible module in the system. More detailed module specifications are available at www.partnerpage.com. If you do not have access to this site, please contact your Datacard representative.

Module	Systems	Description
System Controller	All	The System Controller is the primary interface point for the operator. It includes the hardware and software needed to control the activities performed by each module, and to manage the system as a whole. Each system has a dongle that must be plugged into the Controller computer for the system to work.
Card Input	MX2100/ 6100	This module feeds cards into the system. There is one non-removable tray per module. Multiple Card Input modules can be installed in a system to allow multiple card stocks to be selected or to increase the machine's card supply for large jobs. This module has a rated speed of up to 1,200 CPH for the MX2100, and up to 1,800 CPH for the MX6100.
Card Input - HS	MX8100	This module has the same capability as the module described above, but it has an increased rated speed of up to 3,000 CPH.
High-Capacity Card Input	MX6100/ 8100	This module includes two removable input trays, which allow the operator to load cards while the system is running. Multiple modules can be installed in a system to allow multiple card stocks to be selected or to increase the machine's card supply for large jobs. This module has a rated speed of up to 3,000 CPH.

Module	Systems	Description
Card Cleaning	All	This module cleans the card in the system prior to printing graphics or color, or before applying coatings. The module provides a dual cleaning system that removes dirt and dust contaminants from the card.
Vision Verification	All	This module captures a precise digital image of the front and/or back of the card as it passes through the system. The captured image is then checked by the Controller software for the specified quality and location parameters for images and text. The module can be used for verifying card stock or checking card personalization.
Bar Code Scanner/ Buffer	All	This module reads the bar code on a card, sends the information to the Controller (for the Read/Lookup function), and passes the card to the next module.
RFID/Scanner	MX2100/ 6100	This module has an RFID reader/writer and/or a scanner assembly. It can encode an RFID chip in a card or read data from it. The scanner assembly reads a bar code on the card and sends the data for audit storage or for use in another module.
Magnetic Stripe Encoding	MX2100/ 6100	This module provides high-speed and reliable magnetic stripe encoding. The write/read head writes the magnetic data at specific track locations on the front or back of the card. It then reverses and reads the information to verify it.
Dual Head Magnetic Stripe	MX8100	This module has the same capability as the module described above, but it processes two cards at the same time to increase productivity.
Smart Card Personalization (Rack Design)	MX2100	This module provides flexible, high-quality smart card personalization of cards. The modular architecture allows for the growth of smart card capacity to accommodate longer encoding times for cards without limiting system throughput.
Barrel Dual Interface Smart Card	MX6100/ 8100	This module personalizes contact, contactless, dual interface, and hybrid cards all in one module. The modular architecture allows for the growth of smart card capacity to accommodate longer encoding times for contact cards without limiting system throughput. It supports up to 24 contact encoding heads or 12 contactless or dual (combi) heads.

Module	Systems	Description
Graphics Printing Gen 2	MX2100/6100	The Front Graphics and Back Graphics modules print monochrome custom graphics of any type (including text, logos, bar codes, signatures and fingerprints) on PVC cards using thermal transfer technology.
Dual Head Graphics	MX6100/8100	This module has the same capability as the Graphics Printing module described above, with the addition of dual heads, which allow you to use a single color or multiple colors in the same module.
Single-Step Color Printing	MX2100	This module prints full-color, high-resolution photos and images directly on the card. This module allows near-edge printing using dye diffusion, thermal transfer technology.
Color Printing Gen 2	MX6100/8100	The color printing module prints full-color, high-resolution photos and images directly on the card. This module allows near-edge printing using dye diffusion thermal transfer print technology.
Artista VHD Retransfer Color Printing Gen 2	MX6100	Artista VHD (Variable High Definition) is a retransfer color printing module Gen 2 capable of personalizing blank white cards with 600 dpi (dots per inch) color images. The module prints edge-to-edge with no border required.
Laser Engraving Gen 2	MX6100/8100	This module uses laser technology to engrave text, photos, bar codes, and other images on the card surface. A single module is capable of engraving both the front and back of a card. The Laser Engraving module supports both X- and Y-axis tilted engraving.
Basic Topcoat	All	This module applies a protective clear or holographic coating to a card. It applies the topcoat material horizontally from edge to edge on a card. Different rollers enable full or partial laminate. For example, one roller has a cutout to prevent the topcoat material from being applied to the smart card chip.
CardGard™ UV-Curing Topcoat	All	This module covers the entire front surface of a card with a transparent, UV-cured, topcoat film. The topcoat film is first laminated onto the card's surface and then cured by UV light pulses. The module has a roller with a cutout to prevent the topcoat material from being applied to the smart card chip.
DuraGard™ Laminate	MX6100/8100	This module bonds a heat-activated permanent adhesive layer to the card, which improves the durability and security of the card. There are different height tack and laminate rollers to apply different height protective layers to the card.

Module	Systems	Description
Embossing/Indent	All	This module performs embossing on the front of a card. It can emboss multiple fonts and a wide range of special characters with the 112-character emboss wheel. A module with the indent option installed can also perform indent printing on the front, back, or both sides of the card.
Secure Indent	MX6100/ 8100	This module delivers high-quality indent printing to add tactile elements to national IDs, driver's licenses and other ID cards. It uses variable personalization that physically alters ID cards, which increases tamper resistance and provides level-1 fraud detection for first line inspectors.
Topping Module	MX2100/ 6100	This module applies a color foil to the tops of embossed characters on the card surface. The module can top characters from the lower edge of the card up to the bottom of the magnetic stripe. The rated speed is up to 1,200 CPH for the MX2100, and up to 1,800 CPH for the MX6100.
Topping Module - HS	MX8100	This module has the same capability as the Topping module described above, but it has an increased rated speed of up to 3,000 CPH (depending on configuration).
Label Module	MX2100/ 6100	This module applies a removable preprinted or blank adhesive label to the front of a card. A set of Card Flipper (Rotation) modules is required to apply a label to the back side of a card. Blank labels can be printed on a per-card basis. The rated speed is up to 1,200 CPH for the MX2100, and up to 1,800 CPH for the MX6100.
Label Module - HS	MX8100	This module has the same capability as the Label module described above, but it has an increased rated speed of up to 3,000 CPH (depending on configuration).
Card Flipper (Rotation)	All	This module rotates cards around a vertical axis for back side personalization in the downstream modules. A system is typically configured with a pair of Flipper modules. The first flipper rotates the card 180 degrees. After processing, the second flipper rotates the card back to its initial orientation.
Multi-Card Buffer	All	This module buffers up to 35 cards in slots of a card rack mechanism for faster throughput, or passes cards through the module.

Module	Systems	Description
Quality Assurance	All	This module verifies embossed and indented characters, topping quality, graphics and color printing, laser engraving, magnetic stripe data, and smart card data.
Card Output	All	This module has one tray for good cards and one tray for rejected cards. Multiple Card Output modules can be installed in a system to expand output capacity or to allow card groupings to be separated for quality control, downstream processing/handling, or varying delivery methods.
High-Capacity Card Output	MX6100/ 8100	This module has three removable trays; one tray must be designated for rejected cards. Multiple modules can be installed in a system to expand output capacity or to allow card groupings to be separated for quality control, downstream processing/handling, or varying delivery methods.