MX1100™
MXD110™
MXi112™

Datacard® MX Series System

Entry into centralized card issuance

This entry-level Datacard® MX Series solution offers a variety of pre-configured, fixed solutions for centralized card issuance and delivery. Card issuers can take an affordable first step into centralized card issuance with the quality, reliability, and efficiency needed to expand operations. Seamlessly integrate card delivery and envelope insertion to create inline, automated card-to-envelope solutions.

ENTRUST

SECURING A WORLD IN MOTION

Securely enter centralized card issuance

Datacard® MX1100™ CARD ISSUANCE SYSTEM

Take your card program to the next level of efficiency for a minimal capital investment. The MX1100 System helps card issuers take an affordable first step into centralized card issuance. This system offers a unique combination of low cost per card and proven quality, reliability, and ease of use for expanding card programs.

KEY TECHNOLOGIES

- Magnetic Stripe Encoding
- Smart Card Personalization
- Single-Step Color Printing
- Graphics Printing
- Durable Graphics Printing
- Laser 325
- Laser 425F
- Laser 430G
- Basic Topcoat
- Datacard® DuraGard® Laminate
- Embossing/Indent Printing
- Secure Indent
- Topping
- Label Affixing
- Bar Code Scanning
- Vision Verification Gen 2
- Datacard® MXD110™ Card Delivery System
- Datacard® MXi112™ Envelope Insertion System

High-end personalization and security

A choice of pre-configured systems. The MX1100 System is available in several value-priced fixed configurations — with or without smart card capabilities — allowing you the flexibility to choose the configuration that meets the specific needs of your card program.

Proven design from a trusted partner. Based on the industry-leading Datacard® Central Issuance Platforms, the MX1100 System consistently demonstrates superior productivity and security in incredibly demanding issuance environments worldwide. Multiple physical and logical security features reduce the risk of fraud and theft without slowing the issuance process.

Metal card engraving. The MX1100 System offers customers the ability to produce metal engraved cards or plastic financial cards within the same system, providing a productive solution that can serve as both a standard personalization system as well as a unique program differentiator. Metal cards provide a strong brand statement within high-value or elite card programs. See the Datacard® MX1100™ Card Issuance System for metal card personalization data sheet for more information.

A complete card-to-envelope solution. The Datacard® MXD110™ Card Delivery and Datacard® MXi112™ Envelope Insertion Systems seamlessly integrate with the MX1100 System to enhance your overall card operations. In one automated process, you can affix cards and add marketing insertions into an envelope for a complete card-to-envelope solution.

MX1100 Card Issuance System

Key technologies

Physical and logical security

The MX1100 System offers multiple lines of defense to help reduce the risk of fraud and theft. Logical safeguards protect cardholder and production data, while physical security features limit access to the system controller, card stock, and supplies.

System controller software

Centralized controls and an intuitive interface allow operators to manage all system functions — data input, job setups, card layout design, production environment, error/remake management, and audit/reconciliation management.

The MX1100 System is available in several value-priced, fixed configurations that are ideal for issuing highly secure national IDs, driver's licenses, and healthcare, credit, debit, prepaid, and membership cards.

Magnetic stripe encoding

Write and verify up to three tracks of data simultaneously on ID-1 or mini-cards. Flexible mounting of encoding heads accommodates a wide range of encoding needs. The system provides read/lookup and read/verify functions to automate downstream personalization. It supports all ISO, AAMVA, and JIS encoding formats with common coercivity requirements.

Smart card personalization

Personalize smart cards with a flexible, high-quality, secure system. The system architecture accommodates contact and contactless smart cards, enabling issuers to accommodate many card types.

Single-step color printing

Print full-color, 300 dpi photos, graphics, logos, and images directly on the card using dye diffusion thermal transfer (D2T2) technology. The system allows for near edge-to-edge printing and provides a low-cost color output in a compact footprint. The single-step color printing package includes your choice of basic topcoat or DuraGard laminate.

Key technologies

Laser 325

State-of-the-art fiber optic laser engraving technology delivers exceptional quality. It delivers variable-size photos, alphanumeric text, 1D and 2D bar codes, micro-engraving, black-and-white logos, and other graphical elements at greater than 400 dpi grayscale resolution. The system allows engraving of both the front and back of the card and provides standard CLI and/or optional MLI or 3D tilted image engraving for enhanced visual security.

Laser 425F

This laser is designed to optimize financial card personalization. It utilizes a simplified setup interface, allowing faster creation and updates to ever-changing card layouts. Capable of engraving alphanumeric text, bar codes, and static bitmap images with exceptional quality.

Laser 430G

This laser is designed for secure government applications. It utilizes the latest in precision control architecture and fiber laser technology to deliver high-speed, fine line detail engraving of variable-sized photos, security features, and alphanumeric text.

Graphics printing

Thermal technology enables card issuers to print 300 dpi monochrome, custom graphics, including text, logos, and bar codes. Near edge-to-edge printing and precise placement tolerances deliver excellent results on PVC cards. Flexible configurations allow customers to print different colors on a single side, or print front and back graphics in a single pass.

Durable graphics printing module

Personalize long-lasting, high-resolution 600 dpi monochrome graphics — such as text, logos, bar codes, and other card elements — on PVC cards using thermal transfer UV-cured ribbon technology. Topcoat application is not required.

Basic topcoat

Protect color or graphics-printed images with a true edge-to-edge layer of clear or holographic topcoat. A variety of application rollers are available to meet card program needs.

DuraGard® lamination

Issuers who require extended card durability and security can replace basic topcoat with DuraGard laminate — a polyester patch that offers extra protection. Laminate supplies are available in holographic and a variety of clear laminate sizes.

Embossing/indent printing

Personalize cards using high-quality, ISO-compliant embossing and indent printing on front, back, or both sides of cards. The unique design provides consistent character-to-character spacing, text height, and alignment. Issuers can utilize multiple fonts and a wide range of characters, including Braille and security fonts.

Topping

Colored topping material increases readability of embossed characters. The system delivers consistent, high-quality topping, card after card — exceeding ISO standards.

Bar code scanning

For additional security, the system can read a variety of pre-printed serial numbers, document control numbers, and bar codes used to control and monitor secure card stocks, providing an additional layer of fraud prevention.

Vision verification Gen 2

Automate your quality process with the inline quality checking option. It verifies a wide variety of pre-printed and personalized elements on the front and/or back of cards to help reduce the chance of errors, improve data integrity, and increase efficiency.

Technical specifications

MX1100™ System Specifications

System Controller	Intel Xeon Quad CPU 3.8 GHz
Security Software Capability	Microsoft® Windows® 10 IoT Enterprise 2016 LTSB operating system security access level control and input/export of encrypted and/or digitally signed data. Access and privileges are assigned by the administrator.
Card Input/ Output Trays	Up to 500 (0.03 in. thick) non-embossed cards per tray; 300 embossed cards per tray.
Magnetic Stripe Encoding	Supports common ISO, AAMVA, and JIS formats; High, low, and JIS coercivity Track Density: Standard encoding 75 and 210 bpi (bits per inch), Custom encoding selections from 75 to 315 bpi
Smart Card Personalization	**Combination:** Programming stations: 1 to 6 Full support as documented below for all protocols, frequencies, and communication speeds **Contact:** Programming stations: 1 to 11 Protocols supported: ISO 14443 Type A, Type B, MIFARE, Sony FeliCa, ISO 15693 and ISO 15693 Frequencies (clock speeds): 3.579 MHz, 4.915 MHz, 7.159 MHz and 9.830 MHz Supports communication speeds as defined by ISO 7816-3 up to 230K bps **Contactless:** Programming stations: 1 to 6; Full and half-height antenna supported Protocols supported: ISO 14443 Type A, Type B, MIFARE, Sony FeliCa, and ISO 15693 Frequencies (clock speeds): 13.56 MHz Supports communication speeds of 106, 212, 424, and 847 Kbps
Single-Step Color Printing	**Resolution:** 300 dpi **Text Formats:** Scalable fonts, including OpenType and TrueType fonts for Microsoft® Windows® operating systems **Image Formats:** Certain versions or features of the following Image formats needs to be updated, DCP, DPEG (Datacard 9000 color image format), GIF 87, GIF 89, JPEG, JPEG 2000, PCX, PNG, TGA, and TIFF. For additional information contact your local sales representative. **Placement:** Near edge-to-edge - 0.1 in. (2.54 mm) from card edge, chip, or cutout **Cleaning Area:** Entire front and back surface of the card in one pass. Located by the input trays.
Graphics and Durable Graphics Printing	**Resolution:** 300 dpi (Graphics Printing), 600 dpi (Durable Graphics Printing) **Text Formats:** Scalable fonts, including OpenType and TrueType fonts for Microsoft® Windows® operating systems **Bar Code Formats:** One-dimensional (1D): Code 39, Extended Code 39, HIBC, Codabar, NW7, EAN8, EAN13, JAN8, JAN13, UPCA, UPCE, Bookland, Interleaved 2 of 5, Code 128, EAN/UCC 128, Code 93, MSI Plessey **Image Formats:** Certain versions or features of the following image formats may be supported: BMP, DCP, DPEG (Datacard 9000 color image format), GIF 87, GIF 89, JPEG, JPEG 2000, PCX, PNG, TGA and TIFF. For additional information contact your local sales representative. **Placement:** Near edge-to-edge - 0.1 in. (2.54 mm) from card edge, chip or cutout **Cleaning Area:** Entire front and back surface of the card in one pass. Located by the printhead (Graphics Printing) and located in the input trays (Durable Graphics)
Laser 325	**Technology:** Air-cooled fiber laser; Class 1 laser product **Capabilities:** Pixel engraving: text, photos, bar codes, and other digitized images; vector engraving; text; micro-engraving; tilted image engraving; CLI (standard), MLI (option), 3D photo (option) **Resolution:** Greater than 400 dpi; grayscale **Elements:** Photos, alphanumeric text, vector text, bar codes, signature, fingerprint, black-and-white logos, graphic images, scrambled indicia, tilted images, ghost images, micro-engraving **Text Formats:** Scalable fonts, including TrueType fonts for Microsoft® Windows® operating systems **Bar Code formats:** One-dimensional (1D): EAN13, Code 39, Code 128, Interleaved 2 of 5; Two-dimensional (2D): PDF417, Data Matrix, QR **Image Formats:** JPEG (.jpg),TIFF (.tif), Bitmap (.bmp), PNG (.png)
Laser 425F	**Technology:** Air-cooled fiber laser; Class 1 laser product **Capabilities:** Pixel engraving: text, bar codes, and other digitized images; Vector engraving; text; Micro-engraving **Resolution:** Greater than 400 dpi **Elements:** Alphanumeric text, vector text, bar codes, signature, micro-engraving **Text Formats:** Scalable fonts, including TrueType fonts for Microsoft® Windows® operating systems **Bar Code Formats:** One-dimensional (1D):Code 39, Extended Code 39, HIBC, Codabar, NW7, EAN8, EAN13, JAN8, JAN13, UPCA, UPCE, Bookland, Interleaved 2 of 5, Code 128, EAN/UCC 128, Code 93, MIS Plessey; two-dimensional (2D): QR Code, PDF417, Data Matrix **Image Formats:** JPEG (.jpg),TIFF (.tif), Bitmap (.bmp), PNG (.png), GFF (.giff)
Laser 430G	**Technology:** Air-cooled fiber laser; Class 1 laser product **Capabilities:** Pixel engraving: text, photos, bar codes, and other digitized images; vector engraving; text; micro-engraving; tilted image engraving: CLI, MLI, 3D photo; security features: laser tact, persocurve, photo optimization **Resolution:** Up to 3,200 dpi; grayscale **Elements:** Photo, alphanumeric text, vector text, bar codes, signature, fingerprint, graphics images, scrambled indicia, tilted images, ghost images, micro-engraving **Text Formats:** Scalable fonts, including TrueType fonts for Microsoft® Windows® operating systems **Bar Code Formats:** One-dimensional (1D): Code 39, Extended Code 39, HIBC, Codabar, NW7, EAN8, EAN13, JAN8, JAN13, UPCA, UPCE, Bookland, Interleaved 2 of 5, Code 128, EAN/UCC 128, Code 93, MIS Plessey; two-dimensional (2D): QR Code, PDF417, Data Matrix **Image Formats:** JPEG (.jpg),TIFF (.tif), Bitmap (.bmp), PNG (.png), GFF (.giff)

Technical specifications

MX1100™ System Specifications

Basic Topcoat	Full edge-to-edge embossable topcoat. Available in clear and random or registered custom holographics.
DuraGard® Laminate	Placement within approximately 0.03 in. (0.081 cm) of card edges. Card-to-card placement tolerance of less than 0.032 in. Size/ Thickness: 2.06 in. x 3.31 in. (5.23 cm x 8.41 cm); 1.0 mil thick
Embossing Indent Printing	**Capability:** Up to 8 lines of embossing **Indent Printing:** Front, rear, or both sides of the card **Print Placement:** Vertical: 0.16 in. (4 mm) to 1.46 in. (37.1 mm) from bottom edge of card to center line Horizontal: 0.10 in. (2.5 mm) to 3.2 in. (83.2 mm) from left edge of card to center line **Fonts:** 112-character wheel accommodates multiple fonts and special characters **Standard:** OCR-A, OCR-B, Standard Gothic, Helvetica, Farrington, Katakana. Special, custom, secure fonts, and international language characters
Secure Indent	**Capabilities:** Indent a single line or multiple lines **Fonts:** 112-character indent wheel accommodates multiple fonts and special characters, Standard, outlined, pattern, and custom characters including rotated character fonts (90°, 180°, or 270°) and shapes
Topping	Automatically determines and applies the appropriate topping area based on prior embossing in the same production run **Vertical:** 1.54 in (39.1 mm) measured from bottom edge of the card to uppermost character edge and 0.095 in. (2.4 mm) measured from bottom edge of the card to lowermost edge **Horizontal:** 3.08 in. (78.3 mm) measured from left edge of card to final character edge and 0.24 in. (6.1 mm) measured from left edge of card to first
Pre-Printed Label Affixing	**Label Types Supported:** Pre-printed labels **Label Size:** Minimum: Height: 0.625 in. (15.9 mm), Width: 1.0 in. (25.4 mm); Maximum: Height: 1.0 in. (25.4 mm), Width: 3.0 in. (76.2 mm) **Label Placement:** 1.0 in. (25.4 mm) from the bottom of the card; 0.125 in. (3.175 mm) from the top of the card; 0.10 in. (2.54 mm) from the right or left edge of the card
Bar Code Scanning	**Bar Code Formats:** One-dimensional (1D): EAN12, Code 39, Code 128 and Interleaved 2 of 5; Two-dimensional (2D): PDF417, and Data Matrix **Minimum Height:** One-dimensional (1D): either .25" or 0.15 x total length of code whichever is larger; Two-dimensional (2D): PDF417: minimum height is twice the length of code **Data Matrix:** Minimum height is dependent on amount of data and size of elements. **Narrowest** Width of Space/Bar in Bar code: Code 39, code 128, Interleaved 2 of 5 0.005 in. (0.127 mm); UPC 0.013 in. (0.330 mm); PDF417 0.0066 in. (0.167 mm); Data Matrix 0.015 in. (0.381 mm)
Vision Verification Gen 2	**Readable Elements:** Basic support for many TrueType fonts for Microsoft Windows operating systems; printed and pre-printed graphics, laser, OCR-B (including ICAO MRZ standards for cards)* Image Rotation Capabilities: Supports rotation at 90, 180, and 270 degrees Minimum Verifiable Text Size: High-quality, lithographic printing - 0.06 in. (1.52mm)
System Height and Depth	To top of module 50.1 in. (127.3 cm). Front to back 33.8 in (85.9 cm)
Electrical Requirements	230V, 50/60Hz, 15 Amps
Operating Requirements	Room temperature: 65° to 80° F (18° to 27° C); Humidity: 35% to 85% (non-condensing); See module data sheets for specific information
Storage Requirements	Room temperature: 50° to 130° F (10° to 54° C); Humidity: 0% to 85% (non-condensing)
MXD110 and MXi112 Systems	See MXD110 Card Delivery System and MXi112 Envelope Insertion System data sheets for more information

*For more information, please contact a local sales representative

The MX1100 System offers flexible options with or without smart card. Choose the configuration that meets your card production needs. For more information on the configuration options and their included technologies, refer to the MX1100 Systems Configurations Overview Guide available on PartnerPage.

Base MX1100 System Configurations		Target Applications
DG	Durable Graphics	Financial Credit, Debit
DGS	Durable Graphics, Smart Card Enabled	Financial Credit, Debit
G	Graphics	Driver's License, Healthcare, Gift, Credit, Direct Mail, Membership
GS	Graphics, Smart Card Enabled	National ID, Healthcare, Driver's License, Flat Credit, Gift
E	Embossing	Financial Credit, Debit, Gift
ES	Embossing, Smart Card Enabled	EMV, Credit, Debit, Gift
L/LG	Laser	National ID, Social Security
LF	Laser	Financial Credit, Debit
LS/LGS	Laser, Smart Card Enabled	National ID, Driver's License
LFS	Laser, Smart Card Enabled	Financial Credit, Debit

Metal Card MX1100 System Configurations		Target Applications
ML/MLF	Metal Card	Financial Credit, Debit
MLS/MLFS	Metal Card, Smart Card Enabled	Financial Credit, Debit
MLP/MLFP	Metal & Plastic Card	Financial Credit, Debit
MLPS/MLFPS	Metal & Plastic Card, Smart Card Enabled	Financial Credit, Debit

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