DATACARD® MX1100™ CARD ISSUANCE SYSTEM

KEY TECHNOLOGIES

- *Magnetic Stripe Encoding*
- *Smart Card Personalization*
- *Single-step Color Printing*
- *Graphics Printing*
- *Laser Engraving*
- *Basic Topcoat*
- *Datacard® DuraGard® Laminate*
- *Embossing/Indent Printing*
- *Topping*
- *Label Affixing*
- *Bar Code Scanning*
- *Quality Checking*
- *Datacard® MXD™ Lite card delivery system*
- *Datacard® MXi™ envelope insertion system*

Affordable and secure centralized card issuance

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

- **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 Datacard Group's industry leading 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.

- **A complete card-to-envelope solution.** The Datacard® MXD™ Lite card delivery and Datacard® MXi™ 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.

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KEY TECHNOLOGIES

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

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 allows operators to manage all system functions — data input, job setups, card layout design, production environment, error/remake management and audit/reconciliation management.

Magnetic Stripe Encoding

Write and verify up to three tracks of data simultaneously on ID-1 or mini-cards. Flexible mounting of encoding heads accommodate 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 and secure system. The system architecture accomodates contact and contactless smart cards enabling issuers to accomodate 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.

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.

Laser Engraving

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 gray scale resolution. The system allows engraving of both the front and backside of the card and provides standard CLI and/or optional MLI or 3D tilted image engraving for enhanced visual security.

KEY TECHNOLOGIES

Basic Topcoat
Protect color 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 clear and holographic options.

Embossing/Indent Printing
Personalize cards using high-quality, ISO-compliant embossing and indent printing on front, back or both sides of cards designed to maximize reliability and uptime. Its unique card-track design holds cards securely during embossing to provide consistent character-to-character spacing, text height and alignment. The large metal emboss wheel enables the use of multiple fonts and support 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.

Label Affixing
Increase production efficiency by affixing adhesive labels to cards for security, activation or promotional programs.

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

Quality Checking
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.

MX1100 SYSTEM CONFIGURATIONS

	MX1100 (G) Graphics	MX1100 (GS) Smart Card Enabled	MX1100 (E) Emboss	MX1100 (ES) Smart Card Enabled	MX1100 (L) Laser	MX1100 (LS) Smart Card Enabled
TARGET APPLICATIONS	Driver's License Healthcare, Gift Credit, Direct Mail, Membership	National ID, Healthcare, Flat Credit Driver's License, Gift	Financial, Credit, Debit, Gift	EMV, Credit Debit, Gift	National ID, Social Security	National ID, Driver's License
Base System	•	•	•	•	•	•
Magnetic Stripe	Option	Option	Option	Option	Option	Option
Smart Card		•		•		•
Laser Engraving					•	•
Single-step Color	Clr Pkg	Clr Pkg	Clr Pkg	Clr Pkg	Clr Pkg	Clr Pkg
Graphics 1	•	•	Option	Option	Option	Option
Graphics 2	Option	Option	Option	Option	Option	Option
Graphics 3	Option	Option	Option	Option	Option	Option
Basic Topcoat	Clr Pkg	Clr Pkg	Clr Pkg	Clr Pkg	Clr Pkg	Clr Pkg
Embossing			•	•	Option	Option
Topping			•	•		
Label Affixing	Option	Option	Option	Option	Option	Option
Bar Code Scanning	Option	Option	Option	Option	Option	Option
DuraGard Laminate	Replaces Basic Topcoat	Replaces Basic Topcoat			Replaces Basic Topcoat	Replaces Basic Topcoat
Quality Checking	Option	Option	Option	Option	Option	Option
Base System Specifications						
Rated Speed	Up to 600 cph					
Operating System	Microsoft® Windows® XP Professional					
Card Types Supported	ISO/IEC 7810 ID-1 Size; 30 mil (±10%)					
Card Materials	All card materials can be processed, including PVC, composite, polycarbonate, ABS, PET and PETG. Laser engraving recommended for polycarbonate, composite or PVC with special layer. Color printing recommended for PVC or PVC laminated cards. When combining laser and color card material must be tested for compatibitlity. Limitations may exist for each personalization technology.					
Agency Approvals	FCC, UL, CUL and ROHS compliant					

• = Part of base system configuation

DATACARD® MX1100™ CARD ISSUANCE SYSTEM

System Specifications

System Controller	Intel® Xeon® Quad Core, 2.4 GHz; Memory 4.0 GB; Hard Drive 500 GB
Card Input/Output Trays	Up to 550 cards (less for embossed)
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: Contact programming stations: 1 to 11 Contactless 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: Full ISO 7816-3, T=0/T=1 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 top-half antenna supported Protocols supported: ISO 14443 Type A, Type B, Philips MIFARE®, Sony FeliCa® 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 TrueType fonts for Microsoft® Windows® operating systems Image Formats: Certain versions or features of the following image formats may be supported: BMP, DCT (Datacard 9000 UltraGrafix® monochrome image format), 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
Graphics Printing	Resolution: 300 dpi Text Formats: Scalable fonts, including TrueType fonts for Microsoft® Windows® operating systems Bar Code Formats: One-dimensional (1D): Code 39, Code 3 of 9, Code 39 Extended, Code 39 HIBC, Codabar, NW7, EAN8, JAN8, EAN13, JAN13, UPCA, UPCE, Booklan, Interleaved 2 of 5, Code 128, EAN_UCC128, Code 93, MSI Plessey, UK Plessey Two-dimensional (2D): PDF417 and Data Matrix Image Formats: Certain versions or features of the following image formats may be supported: BMP, DCT (Datacard 9000 UltraGrafix® monochrome image format), 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
Laser Engraving	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 3 of 9, Code 128, Interleaved 2 of 5 Two-dimensional (2D): PDF417, Data Matrix, QR Image formats: JPEG (.jpg),TIFF (.tif), Bitmap (.bmp), PNG (.png)
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	Up to 8 lines of embossing Indent printing: front, rear or both sides of the card Emboss and indent 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 Wide variety of characters and fonts: 112-character wheel accomodates multiple fonts and special characters Standard fonts: OCR-A, OCR-B, Standard Gothic, Helvetica, Farrington, Katakana Special, custom and secure fonts International language characters
Topping	Automatically determines the appropriate topping area based on prior embossing Placement: 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 character 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 character edge Topping foil can only be applied to cards that are embossed in the same production run
Label Affixing	Label types supported: Utlizes the same supplies as the Datacard® MX6000™ card issuance system and the Datacard® 9000 Series card issuance system Preprinted labels (see Datacard specification document 530202-001) 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 3 of 9, 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 3 of 9, 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)
Quality Checking	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 Verifi able Text Size: High-quality, lithographic printing - 0.06 in. (1.52mm)
System Height	To top of module 50.1 in. (127.3 cm)
System Depth	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: 20% to 85% (non-condensing)
Storage Requirements	Room temperature: -50° to 130° F (-46° to 54° C); Humidity: 0% to 100% (non-condensing)

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