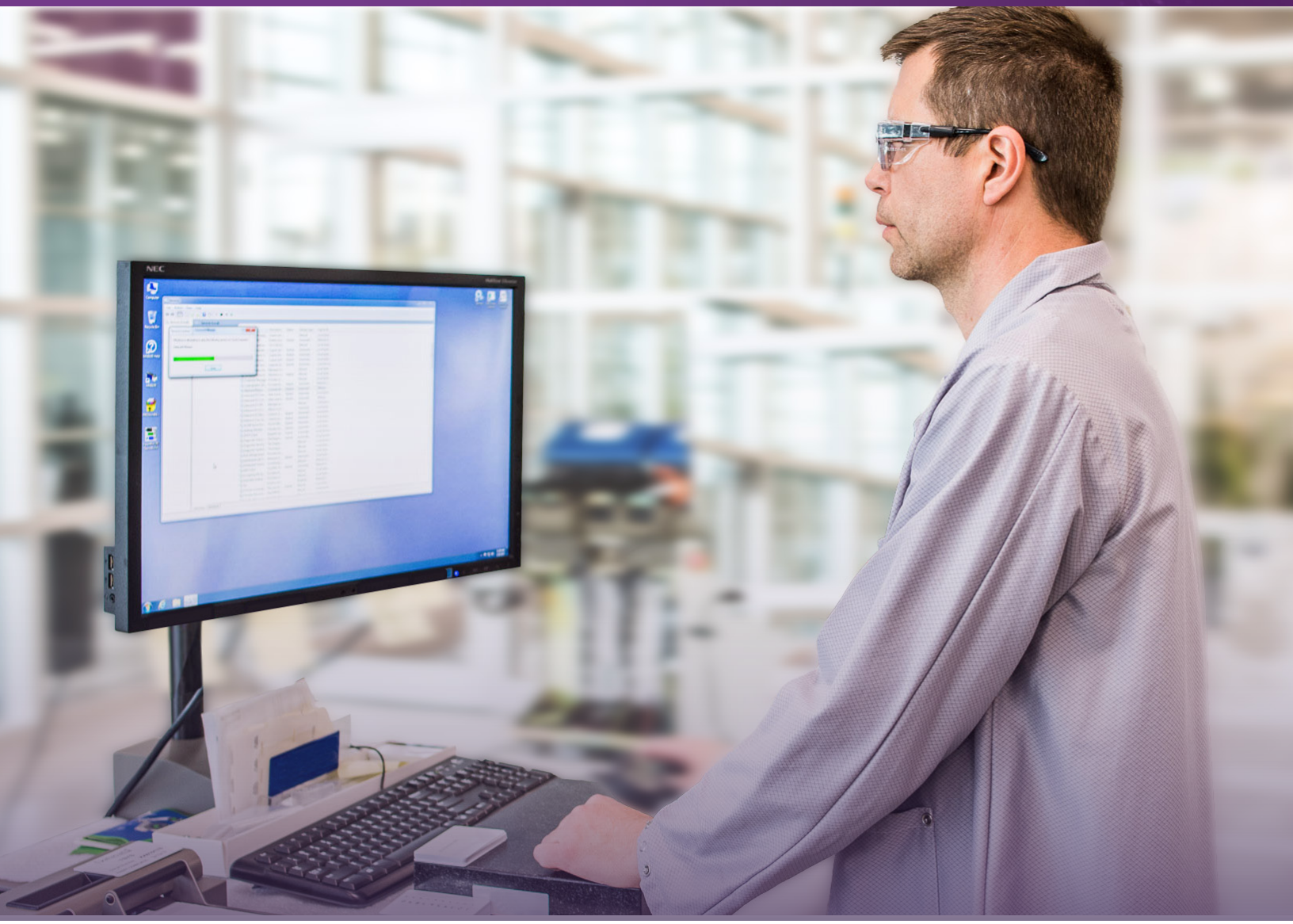
SOLUTION BROCHURE

Datacard® MX Series System

MX1100™
MXD111™
MXi115™



ENTRUST
SECURING A WORLD IN MOTION

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.

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 Gen 2
- Smart Card Personalization Gen 2
- Durable Graphics Printing Gen 2
- Graphics Printing Gen 3
- Single-Step Color Printing
- Duplex DoD Lite Printing
- Laser 425F
- Laser 430G
- Basic Topcoat Gen 2
- Datacard® DuraGard® Laminate Gen 2
- Embossing/Indent Printing Gen 2
- Topping Gen 2
- Label Affixing Gen 2
- Card Scanning Gen 2
- Vision Verification Gen 3
- Datacard® MXD111™ Card Delivery System
- Datacard® MXi115™ 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® MXD111™ Card Delivery and Datacard® MXi115™ 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, highquality, secure system. The system architecture accommodates contact and contactless smart cards, enabling issuers to accommodate many card types.

Durable Graphics Printing: 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.

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.

Key Technologies

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.

Duplex DoD Lite Printing: Print full color images, text, and logos; or monochrome text, bar codes, and other elements using UV-curable ink technology. Pre-configured options available.

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.

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.

Card 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: 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 Core i7 CPU, 33MB Cache, 5.4 GHz	
Security Software Capability	Microsoft® Windows® 10 IoT Enterprise 2021 LTSC 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 Gen 2	Up to 500 (0.03 in. thick) non-embossed cards per tray; 300 embossed cards per tray.	
Cleaning	• Cleans entire front and back surface of the card in one pass. • Cleaning sleeve located in the input when Graphics, Durable Graphic, or Single Step Color is optioned.	
Magnetic Stripe Encoding Gen 2	• 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	
Datacard and Smartware Programming Stations Available	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: Full ISO 7816-4, T=0/T=1 Frequencies (clock speeds): 3.6 MHz, 4.5 MHz, 6.0 MHz, 9.0 MHz, 18 MHz (clock frequencies) Supports communication speeds as defined by ISO 7816-3 up to 230K bps
	Contactless: (Datacard only)	Programming stations: 1 to 6; Full and half-height antenna supported Protocols supported: ISO 14443 Type A, Type B, MIFARE, 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 may be supported: Supported after CIS v10.11: TIFF, JPEG, PNG, BMP Not supported after CIS v10.11: DCP, DCT, DPCF, DPEG, DPG, PCX, TGA, GIF87
	Placement:	Near edge-to-edge - 0.1 in. (2.54 mm) from card edge, chip, or cutout
Graphics Printing Gen 3 and Durable Graphics Printing Gen 2	Resolution:	300 dpi (Graphics Printing Gen 3), 600 dpi (Durable Graphics Gen 2)
	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 Stacked: PDF417
	Image Formats:	Two-Dimensional (2D): QR, Aztec, Data Matrix Certain versions or features of the following image formats may be supported: Supported after CIS v10.11: TIFF, JPEG, PNG, BMP Not supported after CIS v10.11: DCP, DCT, DPCF, DPEG, DPG, PCX, TGA, GIF87
	Placement:	Near edge-to-edge - 0.1 in. (2.54 mm) from card edge, chip or cutout
Duplex DoD Lite Printing	Printing Technology:	Specially formulated fast UV-curing inkjet printing technology
	Resolution:	Native: 600 dpi CMYK; 360 dpi White Effective: Up to 1,200 dpi for CMYK; up to 720 dpi for White
	Text Formats:	Scalable fonts, including TrueType and OpenType 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 Stacked: PDF417 Two-dimensional (2D): QR, Aztec, Data Matrix
	Image Formats:	Certain versions or features of the following image formats may be supported: TIFF, JPEG, PNG, BMP
	Print Placement:	Module can print near edge (1.27mm from card edge) or edge-to-edge for full card printing All printing requires the use of Shuttle Trays to protect the printheads and module components

Technical Specifications

MX1100™ System Specifications		
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, bar codes, and static bitmap
	Text Formats:	Scalable fonts, including TrueType and OpenType 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
	Logo Formats:	JPEG (.jpg),TIFF (.tif), Bitmap (.bmp), PNG (.png), GIF89 (.gif)
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: LaserTact, 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 and OpenType 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;
		Stacked: PDF417
	Two-dimensional (2D):	QR Code, Data Matrix
	Image Formats:	JPEG (.jpg),TIFF (.tif), Bitmap (.bmp), PNG (.png), GIF89 (.gif)
	Tilted laser range:	Vertical axis 330°
		Horizontal axis 320°
		3D image 310° (either vertical or horizontal axis may be used)
	Tilted engraving placement:	0.315 in. (8.0 mm) from any edge on the card
Basic Topcoat Gen 2	Full edge-to-edge embossable topcoat. Available in clear and random or registered custom holographics.	
DuraGard® Laminate Gen 2	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 Gen 2	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 III Special, custom, secure fonts, and international language characters
Topping Gen 2	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

Technical Specifications

MX1100™ System Specifications		
Pre-Printed Label Affixing Gen 2	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
Card Scanning Gen 2	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
		Stacked: PDF417
		Two-dimensional (2D): QR, Aztec, Data Matrix
	Minimum Height:	One-dimensional (1D): Either 0.25 in. or 0.15 x total length of code, whichever is larger
		Stacked: PDF417: Minimum height is twice the length of the code
		Two-dimensional (2D): Data Matrix: Minimum height is dependent on amount of data and size of element
	QR:	Minimum height is dependent on amount of data and size of element
	Aztec:	Minimum height is dependent on amount of data and size of element
	Bar Code Requirements:	Narrowest width of space or bar in bar code:
		One Dimensional (1D): Code 39 0.0075 in. (0.191 mm) Code 128 0.0075 in. (0.191 mm)
		UPC 0.0075 in. (0.191 mm) Interleaved 2 of 5 0.005 in. (0.127 mm)
	Stacked:	PDF417 0.015 in. (0.381 mm)
		Two Dimensional (2D): Data Matrix 0.015 in. (0.381 mm) QR 0.015 in. (0.381 mm)
		Aztec 0.015 in. (0.381 mm)
		Codes printed in black on white recommended
Vision Verification Module Gen 3	Readable Elements:	Basic support for many TrueType and OpenType fonts for Microsoft®
		Windows® operating systems; printed and pre-printed graphics, durable graphics, drop on demand, laser, and OCR-B characters (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)
		High-quality color (D2T2) and graphics printing — 0.085 in. (2.16mm)
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)	
Storage Requirements	Room temperature: 50° to 130° F (10° to 54° C); Humidity: 0% to 85% (non-condensing)	
MXD111 and MXi115 Systems	See MXD111 Card Delivery System and MXi115 Envelope Insertion System data sheets for more information	

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.

Base MX1100 System Configurations		Target Applications
DGS2	Durable Graphics, Smart Card Enabled	Financial Credit, Debit
DODL	Drop on Demand	Driver's License, National ID, Healthcare, Gift
DODLS	Drop on Demand	Financial Credit, Debit
G2	Graphics	Driver's License, Healthcare, Gift, Credit, Direct Mail, Membership
GS2	Graphics, Smart Card Enabled	National ID, Healthcare, Driver's License, Flat Credit, Gift
E2	Embossing	Financial Credit, Debit, Gift
ES2	Embossing, Smart Card Enabled	EMV, Credit, Debit, Gift
LG2	Laser	National ID, Social Security
LGS2	Laser, Smart Card Enabled	National ID, Driver's License

Metal Card MX1100 System Configurations		Target Applications
MLFS2	Metal Card, Smart Card Enabled	Financial Credit, Debit
MLFPS2	Metal & Plastic Card, Smart Card Enabled	Financial Credit, Debit

For more information on the metal card configuration options, refer to the **MX1100 Metal Card data sheet.**

ABOUT ENTRUST

Entrust fights fraud and cyber threats with identity-centric security that protects people, devices, and data. Our comprehensive solutions help organizations secure every step of the identity lifecycle, from verifying identity at onboarding to securing connections and fighting fraud in everyday transactions. Ongoing monitoring supports compliance and safeguards keys, secrets, and certificates. With a foundation of identity-centric security, our customers can transact and grow with confidence. Entrust has a global partner network and supports customers in over 150 countries.

For more information, visit **www.entrust.com**

Learn more about the MX Series at **entrust.com**

entrust.com Toll-Free: 888.690.2424 | International: +1.952.933.1223 | sales@entrust.com

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