uDynamo for Retail

Secure Card Reader Authenticator (SCRA)

MagTek's uDynamo provides universal connection options for its users. The uDynamo secure card reader authenticator connects to a wide variety of devices (more than 221 mobile phones and tablets as of Feb 2014) through its retractable headphone jack. It also provides a USB interface for connection with various devices including Windows or Mac PCs, and is perfect for use with a virtual terminal.

MagTek's uDynamo is built around the MagneSafe™ Security Architecture (MSA), a layered approach to transaction security that combines encryption, tokenization, authentication and dynamic data to protect payment transactions and card data from the point of swipe.

The uDynamo combines the latest technologies to be the most secure, versatile, reliable and cost-effective mobile reader in the market.

uDynamo
Secure card reader authenticator connected to Samsung Galaxy S3 shown here

compact
PORTABLE
bi-directional

iOS

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uDynamo Design Features

Adjustable stabilizer for a variety of devices

The adjustable stabilizing grips allow the uDynamo to easily attach to a wide variety of phones and tablets allowing the user to adjust the fit for optimum mounting stability. The stabilizer grips can be adjusted in 3 different positions with two different size grips, enabling the uDynamo to avoid interference with on/off buttons, cameras, protective cases and other design elements that are unique to each phone/tablet.

Swipe path design yields highest read reliability on first pass

The swipe path is designed for maximum stability as the card and mag stripe travels over the read head ensuring a more consistent and reliable card read. Smaller readers might be cute, but they are more difficult to work with and often require more training, significant dexterity and often two hands for swiping and stability. Because of this, users may often find it necessary to swipe cards several times before a good read occurs.

Rechargeable on-board battery allows for 1,000,000 swipes

Lower cost readers have a total life expectancy of 20K swipes. By using a re-chargeable battery, the uDynamo can deliver about 1 million lifetime swipes.

uDynamo
Secure card reader authenticator connected to iPad Mini shown here

Retractable headphone jack interface - digital output

Fixed headphone jacks can easily break, get in the way and even poke you while in your pocket. uDynamo was designed to allow the headphone jack to retract and move out of the way when not in use.

USB interface (power and comm i/o)

The uDynamo is the first mobile reader that can also connect to a PC or Mac computer for additional use with a virtual terminal, thus extending its overall value and use cases.

Track 1, 2 and 3 data

The uDynamo can read 3 tracks of data capturing alpha and numeric account data. Track 2 only readers cannot read alpha data from ATM/credit/debit/gift cards. By capturing more track data, the uDynamo delivers more information that can be used to ensure the card that is swiped has the same embossed and printed account holder data as compared to the encoded data on the stripe. Having access to Track 1 data, users can read account holder name information and address their customers by name as well as have data redundancy in the event there is a read error on either track 1 or 2, but NOT both.

Reads ANSI/ISO/AAMVA cards

The uDynamo can also read data that is encoded to national and International standards. This allows uDynamo developers to enhance their applications with value-added identification and read functionality that includes the ability to read many US drivers' licenses.

uDynamo Security

Triple DES encryption sealed inside the head

The uDynamo encrypts all the data within the confines of the magnetic head. The encryption of the decoded magnetic wave patterns and the authentication data occurs before it leaves the magnetic head. Hence, any data that can be monitored or trapped along the external head wires has already been encrypted with a unique key, rendering it of no value to a malicious coder. By utilizing encryption inside the read head, criminals have no opportunity to gather clear-text card data prior to encryption taking place. By using Triple DES/3DEA, the uDynamo delivers a powerful, fully vetted, open-standard encryption algorithm.

Derived Unique Key per Device and Transaction

By utilizing DUKPT key management, every uDynamo has a unique set of encryption keys that dynamically change with every swipe, making key management easy and robust. The encryption keys are injected using services that have been certified as TR-39 compliant. This helps merchants and their service providers alike by removing significant risks that accompany securing, managing and having access to encryption keys. Competitors that offer DUKPT key management with the AES algorithm are doing so in the absence of national and internationally agreed upon standards. This proprietary key management technique is NOT an open standard.

Remote configuration and key loading

The uDynamo can securely accept a remote key injection/device configuration by utilizing web services from MagTek and Magensa, both TR-39 certified and official ESOs. For more details on MagTek and Magensa's PCI-DSS or ESO status, visit VISA's Global Registry of Service Providers. Some competitors provide FREE utilities that can inject encryption keys. These FREE services are NOT certified as TR-39 compliant and can place merchants and their providers at significant risk for PCI DSS non-conformance, and open up opportunities for criminals to build their own encrypted skimmers, a current reality and major concern for law enforcement.

Mutual device/host authentication

The uDynamo is based on the MagneSafe Security Architecture (MSA). When configured for Security Level 3, mutual authentication is enabled. The host and uDynamo can engage in a cryptographic challenge and response sequence. Both the host and the uDynamo can determine if the other is genuine. In security level 4, the uDynamo is set to require authentication. In this mode, the uDynamo will not turn on or transmit any swipe data until the authentication handshake with a valid host is complete.

The uDynamo can manage session security, so that swipes can be time bounded. The uDynamo can accept an encrypted session ID which is decrypted inside its security processor (inside the head) and returned to the host in the encrypted packet. At the host, the session ID status can be verified. If the session has expired, the swipe data can be ignored and the application can prompt for a fresh swipe. Time bound swipes effectively thwart malicious coders who try to trap an encrypted swipe and save it for future use.

Anti-skimming features

MagnePrint, a counterfeit detection technology, transforms the encoded cardholder data – data that is static by nature – and makes it dynamic, much like a one-time password. Dynamic Digital Identification (DI) delivers unique data, each time a card is swiped based on the cards' MagnePrint. No two are ever repeated, and they can never be fabricated due to the natural, unique characteristics of the stripe, providing the best in counter skimming solutions. The MagnePrint or DI is a constantly changing value that transforms the magnetic stripe card into a unique, non-reproducible, dynamic token.

Counterfeit detection - cards and devices

uDynamos have the ability to see more data. They can read the encoded track data while simultaneously reading the underlying magnetic fingerprint. Every magnetic stripe card has a unique magnetic fingerprint which can be correlated to a reference print. With the ability to look at the magnetic fingerprint from each swipe and authenticate it against the original print, counterfeit cards can be detected at the point of use. The host can then alert the Merchant of the problem, letting it decide whether to accept the risk of a chargeback.

uDynamos can also determine if the data on the card has been altered. Tampered cards pose another problem at point of sale. While CVV1 and CVV2 can protect the account number, expiration date, and service code from alteration, uDynamos can determine if any of the cardholder data has been altered.

Tamper resistant and tamper evident enclosure

The uDynamo has been designed to deter physical intrusion by showing visible evidence if the outer cover has been opened. Since all of the data encryption occurs within the encapsulated read head, physical tampering would be obvious and likely harm the electronics which would render the reader inoperable.

Token generation (the card, the PAN and the transaction)

Generating Tokens inside the uDynamo at the point of swipe eliminates the need to contact a host for token retrieval.

uDynamo vs. the Competition

	uDynamo	ID Tech	Square	RoamPay
Device Compatibility	232 as of 8/1/14	151 as of 6/30/14	Unknown	154 as of 7/27/14
MagnePrint® Technology	YES	NO	NO	NO
MagneSafe™ Security Architecture	YES	NO	NO	NO
Open Standards Encryption	YES	Unknown	Unknown	Unknown
Dynamic Data	YES	NO	NO	NO
DUKPT Key Mgmt.	YES	Yes**	Unknown	Unknown
Secure Key Injection	In the USA	Unknown	Unknown	Unknown
Tokenization	YES	Unknown	Unknown	Unknown
Card Authentication	YES	NO	NO	NO
Ability to Identify Counterfeit Cards	YES	NO	NO	NO
SCRA	YES	NO	NO	NO
Audio Jack Reader	YES	YES	YES	YES
USB Interface	YES	NO	NO	NO
Retractable Headphone Jack	YES	NO	NO	NO
LED	YES	NO	NO	NO
Track 1 Read	YES	YES	NO	YES
Track 2 Read	YES	YES	YES	YES
Track 3 Read	YES	YES	NO	NO
Warranty	1 Year or Ongoing with use of Magensa	1 Year	Ongoing with use of the service	6 Months

*All information regarding the competition was obtained from each company's public website. Information is based on materials available as of June 30, 2014 (ID Tech UniMagPro) and July 27, 2014 (RoamPay G5X)
** There is no industry (National or International) standard for DUKPT Key Management with the AES Algorithm.

Specifications

SECURE CARD READER AUTHENTICATOR (SCRA)
Three (3) tracks)
ISO 7810 and ISO 7811, 7813/ AAMVA
Card Speed: 6 to 60 ips (15 to 152 cm/s)

MESSAGE FORMAT
ASCII

CONNECTOR
Audio jack and micro USB

OPERATING SYSTEM
USB HID including Windows, Mac OS X and Linux

CONTROLS
The uDynamo has no user controls. Control, status and data functions are provided by the host interface. The system requires software on the host device to direct the operation of the card reader through the application programming interface (API).

MECHANICAL
Length: 2.50 in (63.5 mm)
Width: 1.55 in.(39.4 mm)
Height: 0.62 in. (15.7 mm)
Weight:

VOLTAGE/POWER/CHARGING
Power Input: USB port or 5 VDC for charging
Current: 100 mA max
Micro USB interface to allow charging and to provide USB communications to a USB host computer

ENVIRONMENTAL
TEMPERATURE
Operating: 0 °C to 45 °C (32 °F to 113 °F)
Storage: -10 °C to 60 °C (14 °F to 140 °F)
HUMIDITY
Operating: 10% to 90% noncondensing
Storage: 10% to 90% noncondensing
ALTITUDE
Operating: 3000m (10,000 ft)

MAGTEK®
SECURITY FROM THE INSIDE

Founded in 1972, MagTek is a leading manufacturer of electronic systems for the reliable issuance, reading, transmission and security of cards, checks, PINs and identification documents. Leading with innovation and engineering excellence, MagTek is known for quality and dependability. Its products include secure card reader/authenticators, encrypting check scanners, PIN pads and distributed credential personalization systems. These products are used worldwide by financial institutions, retailers, and processors to provide secure and efficient payment and identification transactions. Today, MagTek continues to innovate. Its MagneSafe™ hardware architecture leverages strong encryption, secure tokenization, dynamic card authentication, and device/host validation enabling users to assess the trustworthiness of credentials and terminals used for online identification, payment processing, and high-value electronic transactions. MagTek is headquartered in Seal Beach, CA. For more information, please visit www.magtek.com.

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