DynaMAX

Secure Card Reader Authenticator
Installation and Operation Manual

January 2015

Manual Part Number:
D998200038-10

REGISTERED TO ISO 9001:2008

Table 0-1 - Revisions

Rev Number	Date	Notes
10	Jan 08, 2014	Initial Release

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FCC WARNING STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a different circuit than the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation of this device 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.

CUR/UR

This product is recognized per Underwriter Laboratories and Canadian Underwriter Laboratories 1950.

CANADIAN DOC STATEMENT

This digital apparatus does not exceed the Class B limits for radio noise from 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 B prescrites dans le Réglement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conformé à la norme NMB-003 du Canada.

CE STANDARDS

Testing for compliance with CE requirements was performed by an independent laboratory. The unit under test was found compliant with standards established for Class B devices.

UL/CSA

This product is recognized per Underwriter Laboratories and Canadian Underwriter Laboratories 1950.

ROHS STATEMENT

When ordered as RoHS compliant, this product meets the Electrical and Electronic Equipment (EEE) Reduction of Hazardous Substances (RoHS) European Directive 2002/95/EC. The marking is clearly recognizable, either as written words like "Pb-free," "lead-free," or as another clear symbol (⊘).

Table of Contents

1   Introduction

1.1   About DynaMAX

DynaMAX, MagTek's newest secure card reader authenticator, gives you the freedom you need in your point of sale and point of service environments. Whether you are a hotel, retail merchant, food truck, or theatre, the DynaMAX's ability to work with USB or BLE connection delivers one reader for your mobile or stationary POS solutions, saving you money on a single, low-cost device. The dual interface delivers compatibility for traditional Microsoft Windows and Apple Macintosh computers in addition to BLE compatible tablets and smartphones. The energy requirement extends the life of your disposable batteries, and the USB connection for power keeps you up and running, without worrying about lost sales due to lack of power. DynaMAX is a flexible, reliable, and secure solution that meets your stationary and mobile point of sale and point of service needs

Make checkout faster with a reliable swipe path. Unlike other mobile devices, the DynaMAX has a long read path with well-defined head pressure, and well controlled slot width for maximal first swipe read rate. Your customers will appreciate the faster checkout and will be reassured by one swipe completing their transaction.

The DynaMAX requires no wire management and makes implementation and deployment much easier, since there is no drilling or requirement to fasten the reader. If you do need to install the reader in a traditional stationary environment, you can choose to mount the DynaMAX, with a rubberized no slip pad, with screws, Velcro® or an optional weighed based. The mounting options provide flexible solutions that enable you to use the same DynaMAX device in a stationary environment, and still enable you to remove the device for on-the-floor sales during busy seasons, in person meet-and-greets, and even pop-up tent events.

DynaMAX product features include:

- Open standards-based encryption 3DES (TDEA)
- DUKPT Key Management
- MagnePrint® Card Authentication
- Unique non-changeable device serial number
- Tamper Resistant Security Module (TRSM)
- Immediate card data tokenization
- Protects card data per PCI DSS requirements
- Generates dynamic data with each swipe
- Device/host authentication
- Unique, non-changeable serial number
- Time bound session IDs
- Tokenization
- Masked data

1.2 About DynaMAX Components

The major components of DynaMAX are shown in **Figure 1-1**.
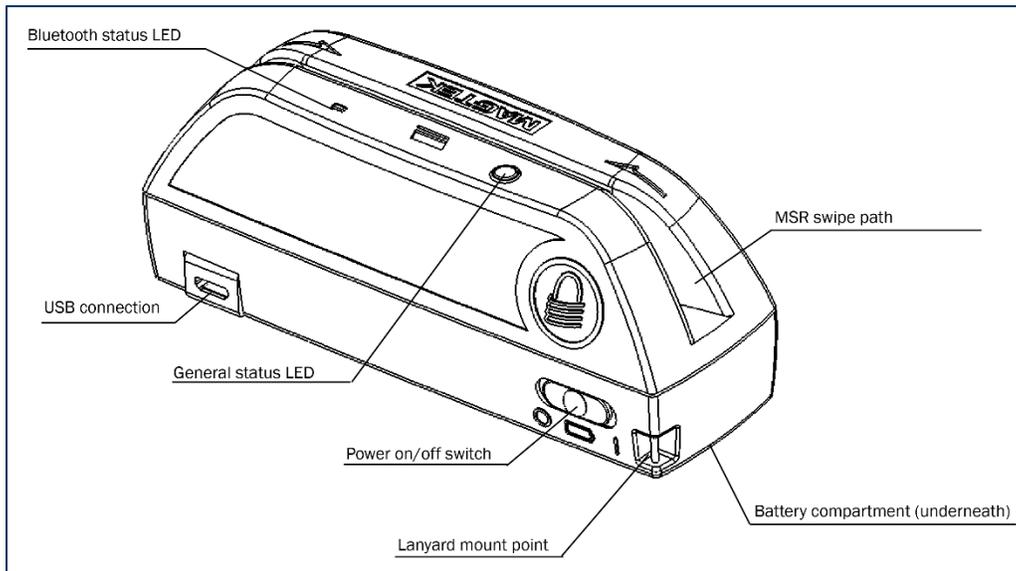
Figure 1-1 – DynaPro Mini Major Components

1.3 About Terminology

In this document, DynaMAX is referred to as the **device**. It is designed to be connected to a **host**, which is a piece of general-purpose electronic equipment which can send commands and data to, and receive data from, the device. Host types include PC and Mac computers/laptops, tablets, and smartphones. Generally, the host must have **software** installed that communicates with the device and is capable of processing transactions. During a transaction, the host and its software interact with the **operator**, such as a cashier or bank teller, while the device interacts with the **cardholder**.

Introduction

1.4   About Solution Planning

A smooth deployment of a DynaMAX solution requires some up-front planning and decision-making:

- Determine what type of **host** DynaMAX will connect to. This can be a computer with a USB port or a host with Bluetooth 4.0 hardware that supports BLE. When planning, include any additional support or devices required by the host, such as physical locations, mounting, and power connections.

- Determine what **software** will be installed on the host and how it will be configured. Software can include operating system, transaction processing software, security software, and so on. Include any additional support required by the software, such as network connections.

- Select which **connection type** the solution will use. DynaMAX can connect physically via USB or via BLE, and logically as a proprietary HID device or as a keyboard emulator.

- Determine how DynaMAX should be **configured**, and specify that when you order devices. For example, although DynaMAX comes with factory default passwords, it is a good idea to choose and set non-default passwords early in the planning process, or request non-default passwords when ordering devices.

- Determine what the solution will use as a **primary power source**. DynaMAX can be powered by the host through the USB port, or can be powered by two AA batteries.

- Determine the **battery replacement schedule(s)**. For example, in high-traffic mission-critical solutions, it may be most appropriate to keep a spare device configured and / or spare batteries available for fast swap-out.

- Determine how DynaMAX will be physically **presented** to the cardholder. This includes choosing a mounting method. When deciding mounting, be sure to consider the connection type and power source. For example, if the primary power source is batteries, the device must be mounted in a way that allows access to the battery compartment on the bottom of the device.

2   Installation

Installing DynaMAX is a straightforward process; the acquirer configures the Certificate Authority, public keys, terminal and payment brand settings before deployment; end users need only set up a host with appropriate software, configure the software, and connect the device to the host. This section provides general information about solutions that incorporate DynaMAX, including host software, connecting the device, and using the device.

2.1   About Host Software

In any solution, DynaMAX is connected to a host, which must have software installed that knows how to communicate with the device, and which is capable of performing actions intended to be carried out when a cardholder swipes a card. Some connection types also require installation of device drivers.

To set up the necessary drivers, see the connection-specific "How To" sections below. To set up the host software to work with DynaMAX, follow the installation and configuration instructions provided by the vendor of the host or the host software.

2.2   About Power

DynaMAX can be powered by one of two methods:

* When the device is connected to a host via USB, it receives power from the host's USB port. In this mode, use the power switch (see **Figure 1-1**) to power on the device.

* When the device is not connected to a computer via USB, it uses two disposable alkaline AA batteries as its primary power source. In this mode, use the power on/off switch (see **Figure 1-1**) to power on the device and the embedded Bluetooth transmitter. The batteries must be periodically replaced: When the batteries need to be replaced, the General Status LED will turn red for one second after a card is swiped. When the batteries are too discharged to power the device, the device will not respond to swipes. In either case, install new batteries by following the steps in section **2.3 How to Install Batteries**.

2.3   How to Install Batteries

To use a BLE connection, the device must be powered by two alkaline AA batteries. To install the batteries, follow these steps:

1) Power off the device using the power switch (see **Figure 2-1**).

2) If the device is fastened to a base, unfasten it to expose the bottom of the device.

3) Use your finger to squeeze the release tab on the battery cover (see **Figure 1-1**), and remove the battery cover.

4) Remove used batteries if they are already installed, and dispose of them according to local e-waste guidelines.

5) Insert the new batteries, making sure to orient each battery to the plus and minus signs stamped inside the battery compartment.

6) Re-attach the battery cover and snap it closed.

7) Power on the device using the power switch (see **Figure 2-1**). If the device is waiting to pair, it should flash the Bluetooth Status LED for up to 60 seconds. Otherwise you may test the batteries by swiping a card and making sure the LEDs flash.
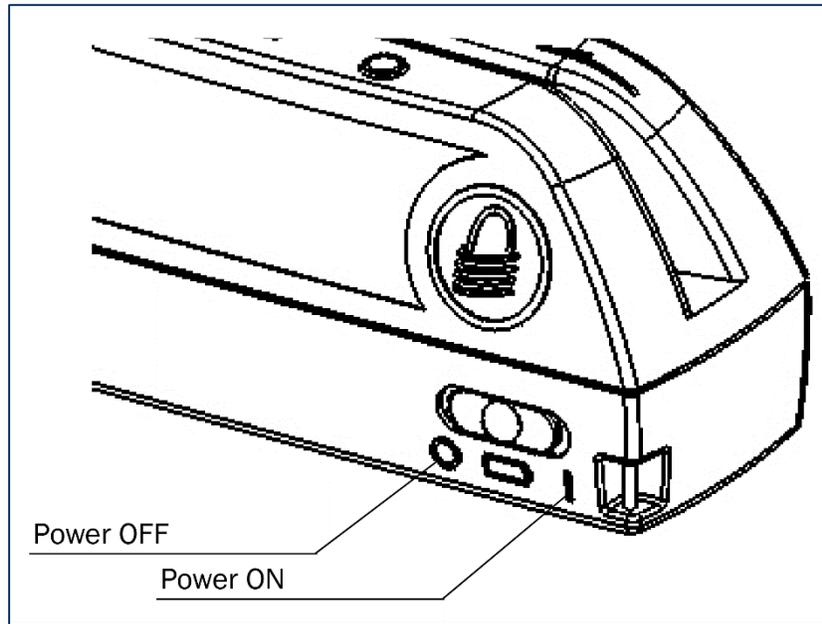
2 - Installation

Power OFF

Power ON

Figure 2-1 - Power Switch

2.4   About Connecting DynaMAX to a Host

The following sections provide steps for connecting DynaMAX to a host via the various available physical connection types.

2.4.1 How to Connect DynaMAX to a Host Computer via USB

To connect DynaMAX to a host computer using the Micro USB port, follow these steps:

1) Make sure the host and device are powered off.

2) Connect the small end of the USB cable to DynaMAX as shown in **Figure 2-2**. The Micro USB connector can be swiveled to orient vertically for connections through the mounting surface, or horizontally for other types of cable run.

3) Connect the large end of the USB cable to the host computer's USB port.

4) Power on the host computer.

5) On the host, install and configure the host software you intend to use with DynaMAX:

   a) Make sure the host software is configured to look for the device on the proper connection.

   b) Make sure the host software knows which device(s) it should interface with.

   c) Make sure the host software is configured to properly interpret incoming data from the device. For direct USB connections, DynaMAX will transmit data using GATT.

6) Power on the device.
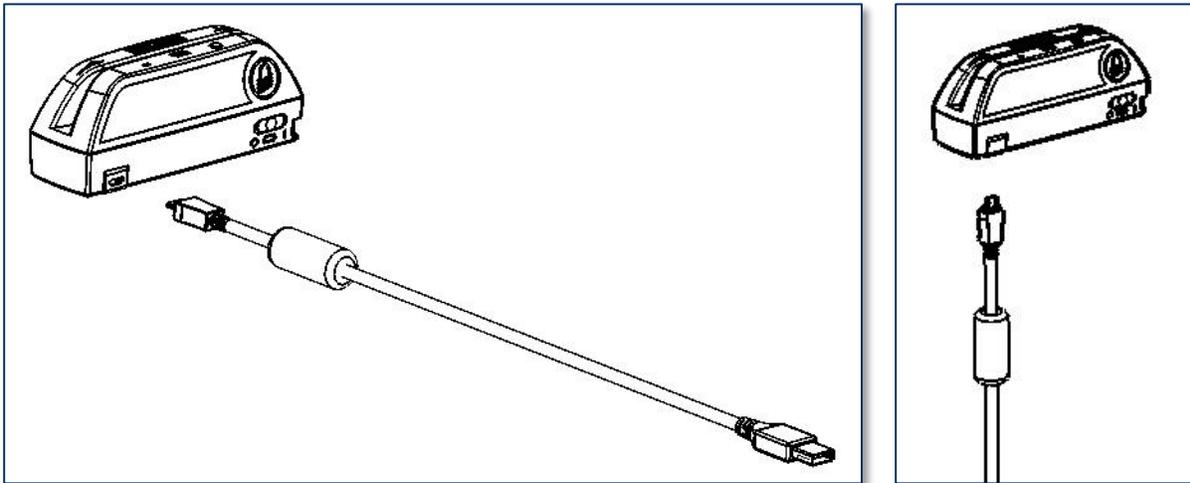
7) Use the host software to test swiping a card.

Figure 2-2 - Connecting DynaPro Mini to a Computer

2.4.2 How to Connect DynaMAX to an iOS Host via BLE

To connect DynaMAX to an iOS host that supports BLE:

1) On the host, install and configure the host software you intend to use with DynaMAX (If you do not yet have that software, you can download a tool from the App Store called "Light Blue," which provides functions to detect the device, connect to the device, and view the device's services and characteristics. See https://itunes.apple.com/us/app/lightblue/id639944780):

    a) Make sure the host software is configured to look for the device on the proper connection.

    b) Make sure the host software knows which device(s) it should interface with.

    c) Make sure the host software is configured to properly interpret incoming data from the device. This depends on whether the device is configured to transmit data in GATT format or streaming format emulating a keyboard.

2) Make sure the DynaMAX's batteries are installed and have adequate charge (see section **2.3 How to Install Batteries**).

3) Test the batteries by powering on the DynaMAX device. Provided the device is not already paired, the Bluetooth Status LED will flash blue every two seconds for up to 60 seconds until pairing is complete. If the Bluetooth Status LED is solid blue, the device is already paired with a host. Unpair from the host it is already paired with before continuing.

4) Locate the serial number on the label on the bottom of the device. Note the final four digits.

5) On the iOS host, launch the `Settings` app and select `Bluetooth`.

6) Make sure the host's Bluetooth radio is turned `On`.

7) Use the host application or Light Blue to pair with the device. If using Light Blue, launch the `Light Blue` app to show a `Peripherals Nearby` list.

8) Read through the list of pairable devices and locate the device called `DynaMAXnnnn`, where nnnn is the last four digits of the device's serial number. Select the device in the list (if the device does not show in the list, power it off then power it back on). The app you are using to pair with the device reports the device is now `Connected` and the device's Bluetooth Status LED shows solid blue. After a few seconds the device will disconnect, which is normal power-saving behavior.

9) While operating the device, if the app pops up a `Bluetooth Pairing Request` message asking for a code, enter the factory default passkey `000000` (or the device's actual password if it has been configured differently).

10) Use the host software to test swiping a card. If you do not yet have host software and the device is configured to run in KB mode, open any text editor and swipe a card. The card contents should appear in the text editor. If the device is configured to transmit data in GATT format, you can use Light Blue to test the device connection and view the device's available features and properties, but you will not be able to test swiping a card.

11) The device will stay powered on until the host terminates the BLE connection, or until an operator or cardholder powers off the device using the BLE power switch. Powering off causes the device to terminate the BLE connection. It is not necessary to power off the device to conserve power when it in regular use. MagTek recommends powering off the device when storing it for prolonged periods. You can then explicitly power on the device using the BLE power switch.

12) Remember to change the default password. See the DynaMAX Programmer's Reference documentation for details.

To unpair from the device:

1) Turn off the device.

2) On the iOS host, launch the **Settings** app and select **Bluetooth** .

3) Press the "i" information icon next to the device's name in the **My Devices** list.

4) Select **Forget this device** .

5) The device's Bluetooth Status LED should no longer show solid blue.

2.4.3 How to Connect DynaMAX to an Android Host via BLE

To connect DynaMAX to an Android host that supports BLE:

1) On the host, install and configure the host software you intend to use with DynaMAX:

   a) Make sure the host software is configured to look for the device on the proper connection.

   b) Make sure the host software knows which device(s) it should interface with.

   c) Make sure the host software is configured to properly interpret incoming data from the device. This depends on whether the device is configured to transmit data in GATT format or streaming format emulating a keyboard.

2) Make sure the DynaMAX's batteries are installed and have adequate charge (see section **2.3 How to Install Batteries**).

3) Test the batteries by powering on the DynaMAX device. Provided the device is not already paired, the Bluetooth Status LED will flash blue every two seconds for up to 60 seconds until pairing is complete. If the Bluetooth Status LED is solid blue, the device is already paired with a host. Unpair from the host it is already paired with before continuing.

4) On the Android host, launch the **System settings** or **Settings** application.

5) Make sure the host's Bluetooth radio is turned **ON**, then touch the **Bluetooth** list item to launch the **Bluetooth** configuration page, which includes a **PAIRED DEVICES** list.

6) Press the **SEARCH FOR DEVICES** or **Scan** button to show an **AVAILABLE DEVICES** list.

7) Locate the serial number on the label on the bottom of the device. Note the final four digits.

8) Read through the list of pairable devices and locate the device called **DynaMAXnnnn**, where nnnn is the last four digits of the device's serial number. Select the device in the list (if the device does not show in the list, power it off then power it back on).

9) When prompted for a passkey, enter the factory default passkey **000000** (or the device's actual password if it has been changed) to return to the **Bluetooth** configuration page. The device appears in the **PAIRED DEVICES** list and the device's Bluetooth Status LED shows solid blue.

10) Use the host software to test swiping a card. If you do not yet have host software and the device is configured to run in KB mode, open any text editor and swipe a card. The card contents should appear in the text editor.

11) The device will stay powered on until the host terminates the BLE connection, or until an operator or cardholder powers off the device using the BLE power switch. Powering off causes the device to terminate the BLE connection. It is not necessary to power off the device to conserve power when it in regular use. MagTek recommends powering off the device when storing it for prolonged periods. You can then explicitly power on the device using the BLE power switch.

12) Remember to change the default password. See the DynaMAX Programmer's Reference documentation for details.

To unpair from the device, follow these steps:

1) Locate the device in the **Bluetooth** configuration page.

2) Press the settings (gear) icon.

3) Press the **Unpair** button. The device should be removed from the **Paired devices** list and the device's Bluetooth Status LED should no longer show solid blue.

2.4.4 How to Connect DynaMAX to a Windows Host via BLE (Windows Drivers)

To connect DynaMAX to a host with Windows 8.1 or higher and Bluetooth 4.0 hardware that supports BLE, follow these steps:

1) If you are using an external Bluetooth adapter, install any required drivers and connect it to the host.

2) On the host, install and configure the software you intend to use with DynaMAX:

   a) Make sure the host software is configured to look for the device on the proper connection.

   b) Make sure the host software knows which device(s) it should interface with.

   c) Make sure the host software is configured to properly interpret incoming data from the device. This depends on whether the device is configured to transmit data in GATT format or streaming format emulating a keyboard.

3) Make sure the DynaMAX's batteries are installed and have adequate charge (see section **2.3 How to Install Batteries**).

4) Test the batteries by powering on the DynaMAX device. Provided the device is not already paired, the Bluetooth Status LED will flash blue every two seconds for up to 60 seconds until pairing is complete. If the Bluetooth Status LED is solid blue, the device is already paired with a host. Unpair from the host it is already paired with before continuing.

5) Enter app mode, scroll down to Apps by name , and launch the Windows PC Settings app.
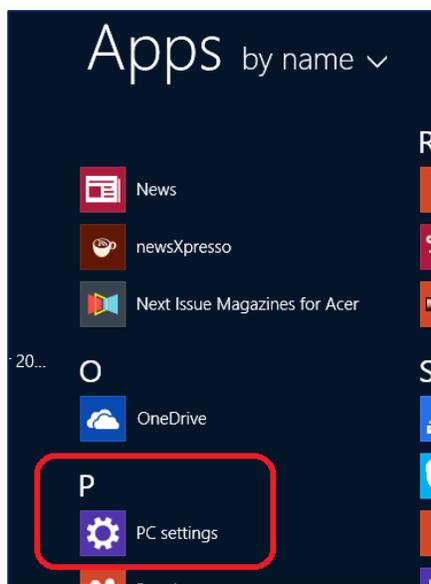
6) In the left side navigator, select PC and devices > **Bluetooth** .

7) Make sure Bluetooth is turned on and close the PC and devices app.

8) Launch the Windows Manage Bluetooth Devices app by following these steps:

   a) Enter desktop mode by swiping in from the left side of the touchscreen.

   b) Touch the Bluetooth icon in the system tray and select Add a Bluetooth Device (see **Figure 2-3**).

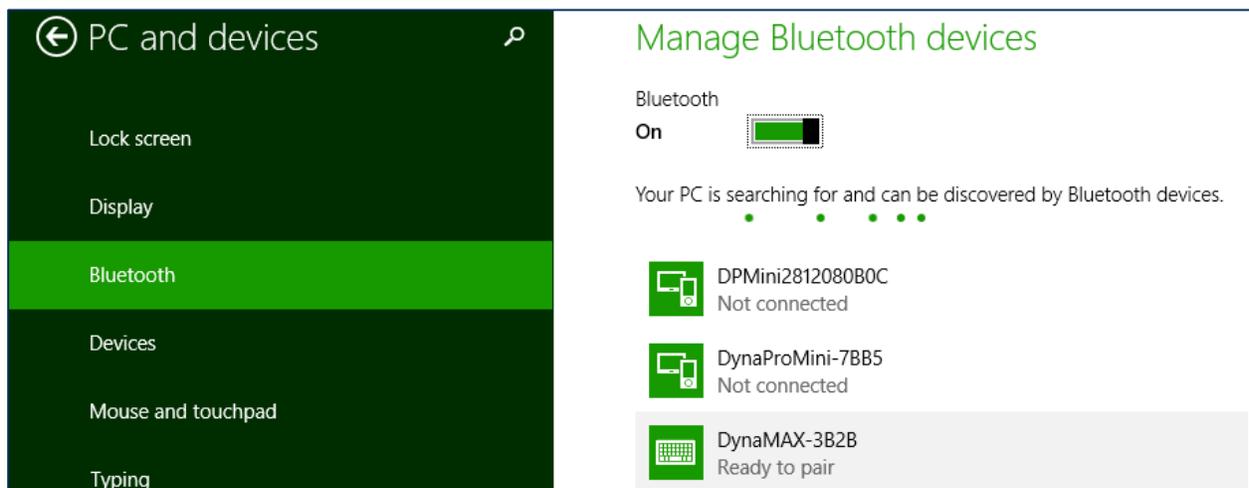**Figure 2-3 - Launch Manage Bluetooth Devices App from Desktop Mode**

Figure 2-4 – Windows 8 Manage Bluetooth Devices App

9) Locate the serial number on the label on the bottom of the device. Note the final four digits.

10) Read through the list of pairable devices and locate the device called DynaMAXnnnn, where nnnn is the last four digits of the device's serial number (if the device does not show in the list, power it off then power it back on). Below the device name you should see the text Ready to pair.

11) Select the device and press the Pair button. If the device is configured to run in KB mode, Windows will prompt you Enter the passcode for your keyboard.
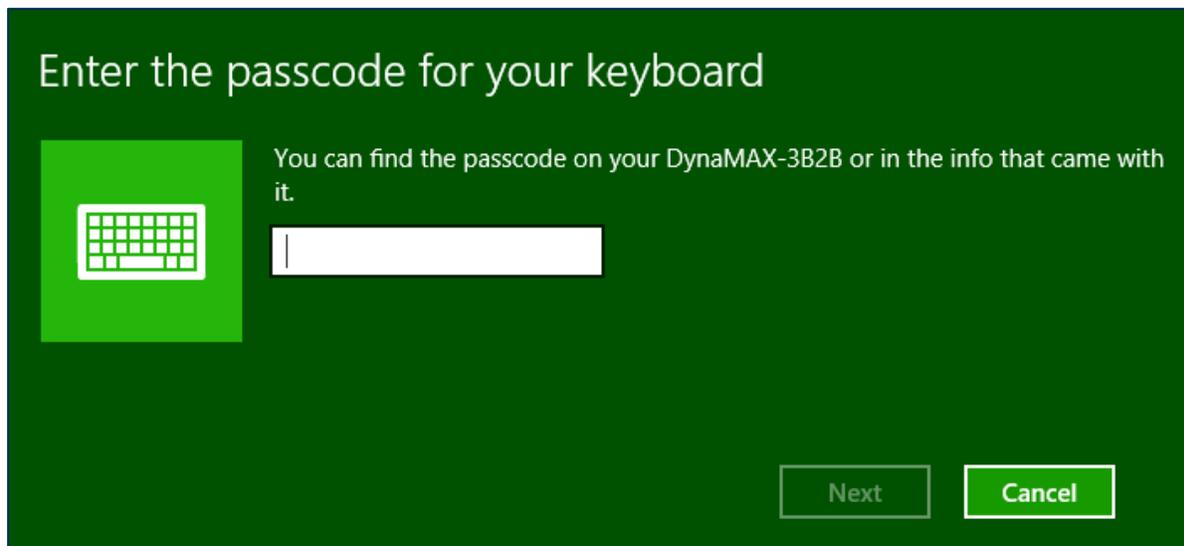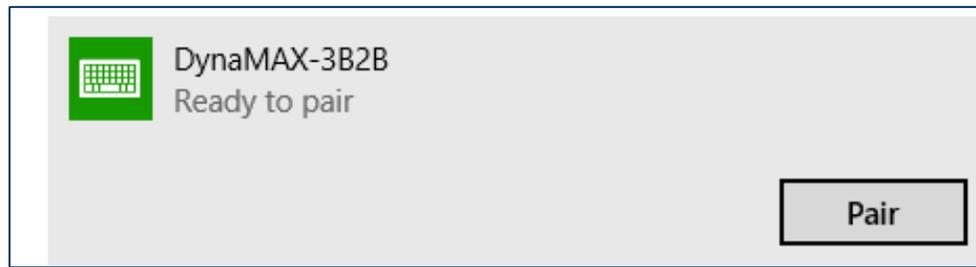
12) Enter default passcode **000000** (or the device's actual password if it has been configured differently), then press the **Next** button. Windows will return you to the **Manage Bluetooth devices** page. After a short period of time, you will see the text **Connected** below the device you are pairing with. After a few seconds the device will disconnect, which is normal power-saving behavior.
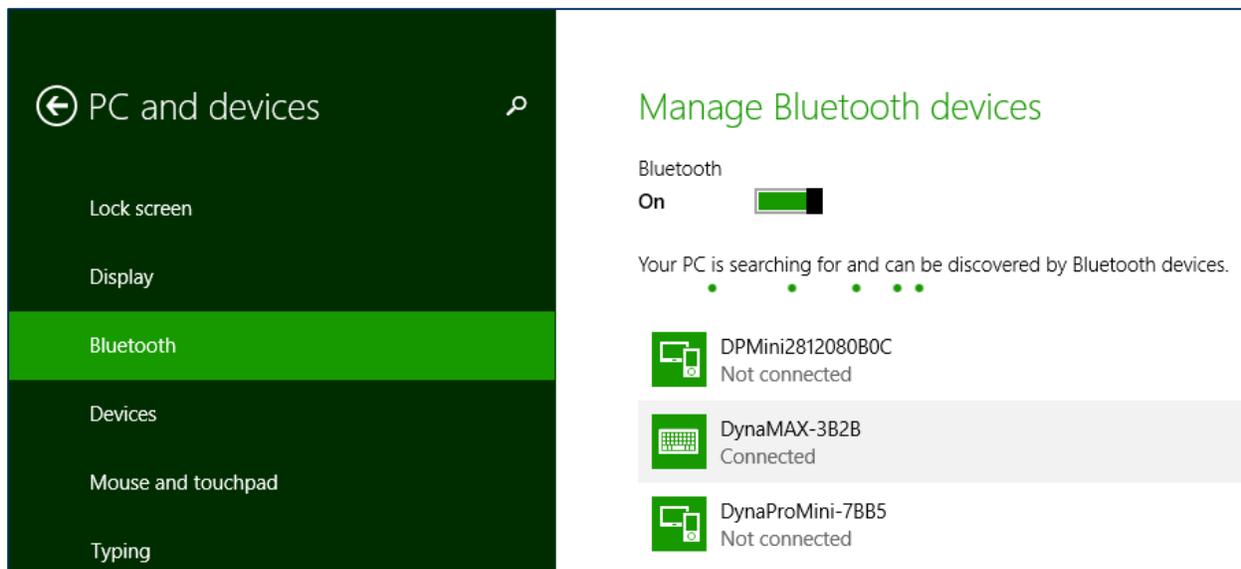
13) Use the host software to test swiping a card. If you do not yet have host software and the device is configured to run in KB mode, open any text editor and swipe a card. The card contents should appear in the text editor.

14) The device consumes very little power when not transmitting card data, so it is not necessary to power off the device to conserve power. If the device appears as **Not connected** in the Windows list of Bluetooth devices, swiping a card should cause the device to reconnect briefly, transmit the card data, then disconnect.

15) Remember to change the default password. See the DynaMAX Programmer's Reference documents for details.

To unpair from the device:

1) Locate the device in the **Manage Bluetooth devices** window.

2) Press the **Remove device** button.

2.5   How to Mount DynaMAX

DynaMAX is designed and tested to operate as a handheld device, portable tabletop device, or surface-mounted device. It supports a variety of mounting configurations:

Supported Temporary / Portable Mounting Configurations (require third-party custom parts):

- Desktop with anti-skid pad
- Desktop with third-party attached weight
- Lanyard
- Hook and loop fasteners

Supported Fixed Mounting Configurations (require third-party custom parts):

- Desktop with threaded mounting holes and cable hidden using through-hole
- Desktop with threaded mounting holes and cable exposed
- Desktop with adhesive and cable hidden using through-hole
- Desktop with adhesive and cable exposed

For solutions that require mechanical mounting, DynaMAX can be mounted with M3.5 screws using the hole pattern shown in **Figure 2-5**, or it can be mounted with adhesive pads or hook-and-loop fastener, as shown in **Figure 2-6**. In these configurations, the Micro USB connector can be turned to support either vertical cable runs direct into the mounting surface with no external visibility, or horizontal cable runs. Permanent mechanical mounts are mostly suitable for solutions where DynaMAX will operate on USB power, because the battery compartment will be inaccessible while the base is fastened to a surface.
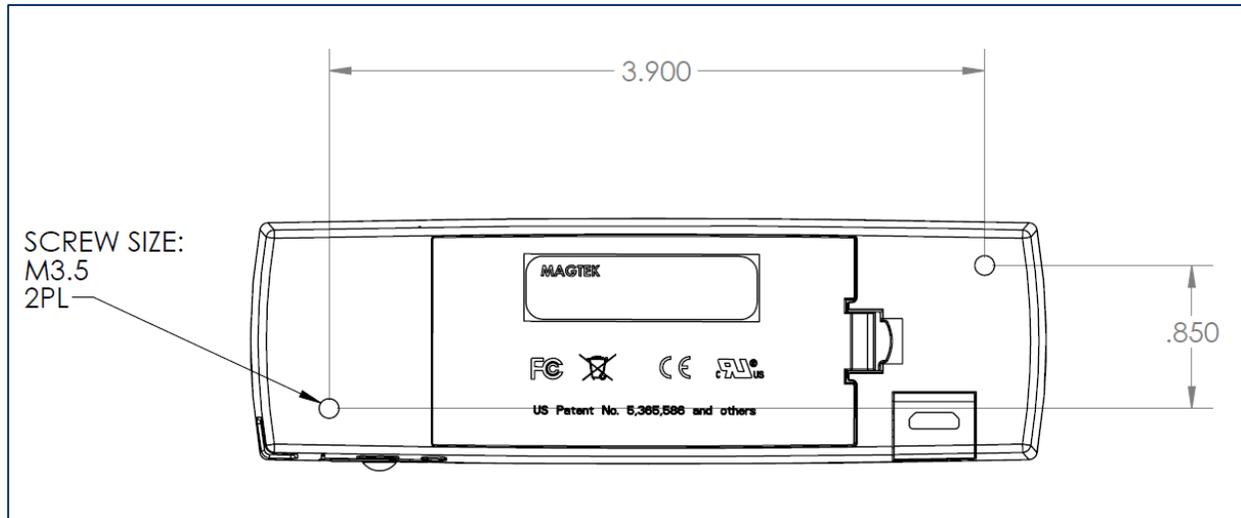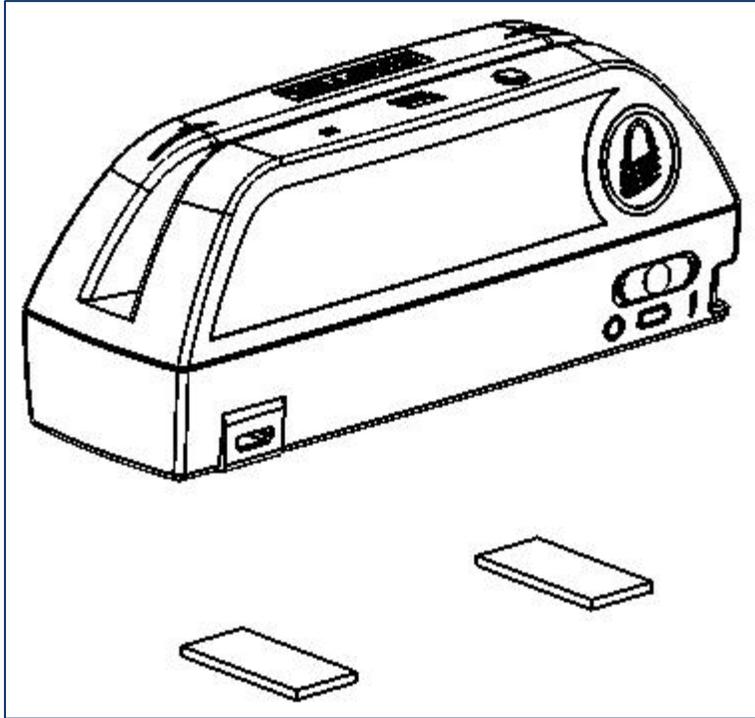

Figure 2-5 - DynaMAX Mounting Screw Hole Pattern

Figure 2-6 - DynaMAX Mounted with Adhesive Pads or Hook-and-Loop

3   Operation

3.1   About the Status LEDs

DynaMAX's **General Status LED** and **Bluetooth Status LED** provide feedback to the operator and cardholder about the internal state of the device (see **Figure 1-1**). **Table 3-2** shows how to interpret the colors and flashing patterns of the General Status LED, and **Table 3-2** shows how to interpret the colors and flashing patterns of the Bluetooth Status LED.

Table 3-1 – General Status LED Meaning

Color	Flashing Pattern		Meaning
Off	Off	———	If connected to USB, device is powered off, or the host has put the device into suspend mode, or a card has just been swiped. If powered by batteries, the device is waiting for a swipe, or device is powered off, or batteries need to be replaced.
Green	Steady On	———	If configured to require authentication, device is waiting for authentication. After authentication is established it will slowly blink green, or will turn steady red if authentication fails. Otherwise, device is ready to read a card.
Green	Two Seconds On	⎍	Device has successfully read a swiped card.
Green	Slow Blinking	⊓⊓	If configured to require authentication, authentication has been established, device is ready to read a card.
Green	Rapid Flashing	⊓⊓⊓⊓	If operating in BLE mode, reader has card data to send to the host, but does not yet have a BLE data connection to the host. Flashing will stop when connection is established or after timeout waiting for connection (15-30 seconds).
Amber	Steady On	———	Device is powered by USB and is waiting for the host to establish a USB data connection.
Amber	Two Seconds On	⎍	If operating in BLE mode, reader has card data to send to the host, but sending has failed.
Red	Steady On	———	If configured to require authentication, authentication has failed. Attempt to re-authenticate, or power off the device, check authentication configuration, and power the device back on.

Color	Flashing Pattern		Meaning
Red	Rapid Flashing		When operating on battery power, a card has just been swiped but batteries must be replaced. If there is enough battery power to transmit card data, expect the LEDs to display standard card data statuses after one second. If followed by no other status, batteries are too low to send data.
Red	On 2 Seconds		Device has failed to decode data on a swiped card. Try the swipe again.

Table 3-2 – Bluetooth Status LED Meaning

Color	Flashing Pattern		Meaning
Off	Off		If operating in BLE mode and device is idle, the device is operating normally.
Blue	Short Flashing		Device is advertising and ready to pair with a BLE host. Device will continue in this mode for 60 seconds or until BLE connection is established.

3.2   Card Reading

Before use, make sure DynaMAX is connected to a power source (see section **2.2** and section **2.3**), is powered on, and is connected to a host (see section **2.4**).

When powered by a USB port, DynaMAX indicates it is ready for a swipe by keeping the General Status LED green. When powered by batteries, it saves power by not keeping any LEDs turned on, but will use the LEDs to report success or failure of the swipe and data transmission after a cardholder swipes a card (see section **3.1 About the Status LEDs** for details).

Cardholders should swipe magnetic stripe cards with the magnetic stripe facing away from the device's power button, as shown in **Figure 3-1**. The operator may then monitor the device's response by using the host software or by watching the status LEDs. See section **3.1 About the Status LEDs** for assistance interpreting the device's LED patterns in response to a swipe.

Figure 3-1 - Swiping a Card Through DynaMAX
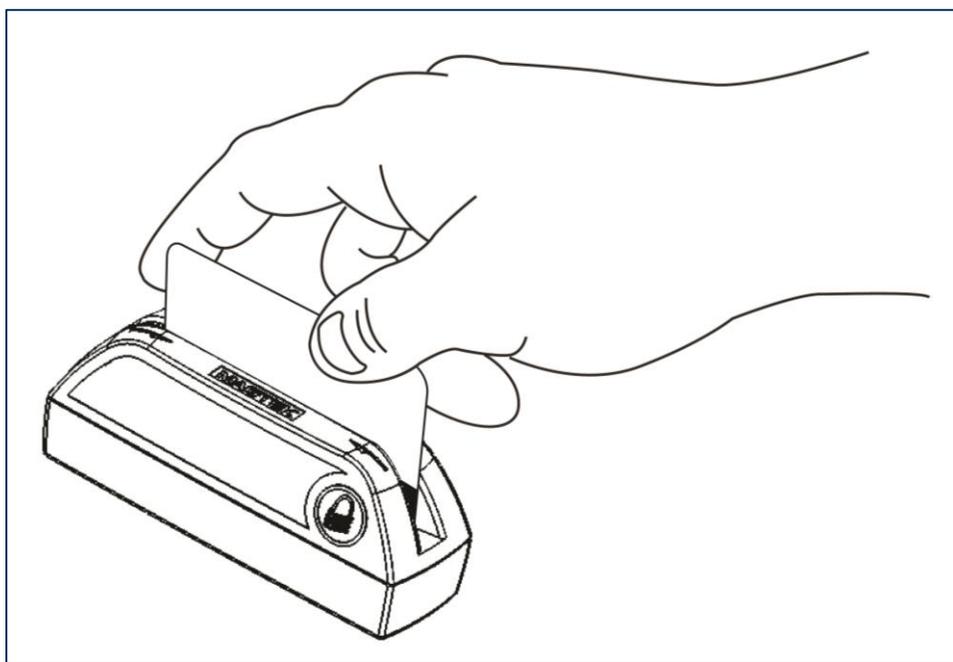
4   Maintenance

Periodic cleaning of DynaMAX's exterior may be required. To clean the outside of DynaMAX, wipe down the device with a soft, damp cloth and then wipe with a dry cloth.

⚠ CAUTION

To avoid damaging the read head, only clean the card path with approved cleaning cards. DO NOT use liquid cleaning products or insert any other objects into the device.

5   Developing Custom Software

Custom software uses the same underlying device command set for all DynaMAX connection types (USB or BLE). The device commands are wrapped differently depending on the physical connection type and the device's configuration. The following sections give high-level information about communicating with the device via the various physical connection types in various software development frameworks, and provide pointers to select API references and sample code.

5.1   USB-Based Custom Software

MagTek produces software development kits (SDKs) with API libraries that provide higher-level functions wrapped around **HID USB** communication protocols. These libraries simplify the development of custom applications that use DynaMAX, and include an SDK for the Microsoft .NET Framework, and an SDK for non-managed Windows executable images, such as.exe or DLL files.

In addition to the SDK API libraries, custom software on any operating system can communicate directly with the device using native USB libraries and protocols.

If you are developing a point-of-sale (POS) application for Windows, you might also consider using the service objects for .NET POS (UPOS 1.12), available from Microsoft.

5.2   BLE-based Custom Software and Apps

When DynaMAX is connected via **BLE** to a host with Bluetooth 4.0 hardware that supports BLE, the device will act as a server/peripheral, and the host will act as a client/central. The custom software wraps commands in simple Get/Set wrappers, and should use whatever BLE library is appropriate for the chosen software development framework. For example, iOS custom apps use Apple's `CoreBluetooth` Framework, for which sample code is available in the form of Apple's Temperature Sensor app; see https://developer.apple.com/library/IOS/samplecode/TemperatureSensor/Introduction/Intro.html.

5.3   For More Information

For more information about developing custom applications that integrate with DynaMAX, see the MagTek web site or contact your reseller or MagTek Support Services.

Appendix A   Technical Specifications

DynaMAX Technical Specifications	
Reference Standards and Certifications	
Magstripe: 3 Track Read Data Encryption: TDEA (3DES)-CBC using DUKPT Ingress Protection: IP-42 FCC Title 47 Part 15 Class B CE Level C EMC CE Safety UR/CUR UL Recognized California Proposition 65 (California) WEEE	
Physical Characteristics	
Dimensions (L x W x H):	4.74 in. x 1.47 in. x 1.82 in. (120.4 mm x 37.34 mm x 46.23 mm)
Weight	With batteries: 4.73 oz. (134.09 g) Without batteries: 3.03 oz. (85.90 g)
Supported Mounting Options:	Desktop with anti-skid pad Desktop with attached weight Desktop with threaded mounting holes and optional recessed cable Desktop with adhesive and optional recessed cable Hook and loop fasteners Lanyard
User Interface Characteristics	
Status Indicators:	Power LED (Blue) Three-color General Status LED (Red/Green/Amber)
Display Type:	Not Applicable
Display Size (viewable area):	Not Applicable
Display Resolution:	Not Applicable
Keypad:	Not Applicable
Card Reader:	Bidirectional 3 track encrypting IntelliHead reader with MagnePrint
Acceptable Swipe Speeds:	6 inches per second to 60 inches per second
Security Characteristics	
Ingress Protection:	ANSI/ISO 60589 ingress protection rating 42
Electrical Characteristics	
Power Inputs:	USB powered via Micro-USB B jack
Battery Type:	Two Alkaline AA

Appendix A - Technical Specifications

DynaMAX Technical Specifications	
Battery Capacity:	Standard Alkaline AA battery capacity, nominally 2.2 AHr
Battery Time, Standby:	5 years
Battery Time, Active:	64,000 swipes over 60 hours
Voltage Requirements:	5 VDC on USB power 3 VDC on battery power
Maximum Current Draw:	< 100 mA
Data Connections:	Bluetooth Low Energy (BLE) wireless Micro-USB, compatible with USB 1.1, USB 2.0
Data Storage:	Not Applicable
Connection Characteristics	
Wired Connection Types:	Micro-USB B with USB HID data format
Wireless Connection Types:	Bluetooth Low Energy (BLE), configured to appear either as a keyboard or as a GATT device
Wireless Range:	Minimum 33 ft. (10 m) in line-of-sight conditions
Wireless Frequency:	2.4 MHz
Software Characteristics	
Tested Operating System(s):	iOS 7.1 Android 4.4.2 USB: Windows 7, Windows 8 BLE: Windows 8.1 on hosts with Bluetooth 4.0 hardware
Environmental Tolerance	
Operating Temperature:	32°F to 113°F (0°C to 45°C)
Operating Relative Humidity:	5% to 90% without condensation at 23°C
Storage Temperature:	-4°F to 149°F (-20°C to 65°C)
Storage Relative Humidity:	5% to 90% without condensation
Vibration Resistance:	Not Applicable
Shock Resistance:	No substantial damage or loss of cryptographic keys after four unconstrained 1-meter drops to a concrete surface
Reliability	
Mechanical Life:	3 years
Shelf Life:	Greater than 10 years
Read Head Life:	1,000,000 card swipes

Appendix A - Technical Specifications

DynaMAX Technical Specifications	
Battery Shelf Life:	Not Applicable
Battery Cycle Life:	Not Applicable