![MagTek logo — SECURITY FROM THE INSIDE]

DynaProx

EMV Contactless/NFC Card Reader and Writer
Installation and Operation Manual

June 2025

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REGISTERED TO ISO 9001:2015

Table 0-1 - Revisions

Rev Number	Date	Notes
10	June 1, 2022	Initial release
11	July 13, 2022	Replaced the word "Plain" with the word "Plane". Changed - Operating Temperature to: DynaProx: -22°F to 185°F (-30°C to 85°C) – DynaProx BCR: -4F to 131°F (-20°C to 55°C) Changed Storage Temperature to: DynaProx: -30°C to 85°C (-22°F to 185°F) – DynaProx BCR: -30°C to 70°C (-22°F to 158°F)
20	November 2, 2022	Updated PCI listing to PCI PTS POI v6.1
30	January 13, 2023	Minor grammatical changes throughout document. Update **Table 4-1 - RS-232 Signals,** Update section **6.6.1 About Power**
40	February 10, 2023	Update **1.1 Key Features** to include Apple VAS for DynaProx Add **6.7.4 Apple VAS for DynaProx** Add **Appendix B Barcode Reader Symbologies**
41	May 1, 2023	Add section **6.3 Introduction to User Interface;** Add section **6.6.3 About Maintenance Reset;** Update section **2.1 Logistical Planning** with current metal interface guidance.
42	August 22, 2023	Update **1.1 Key Features** to include NFC Tag; Add section Error! Reference source not found. Error! Reference source not found.**.**
43	September 12, 2023	Update IK Rating in Section **1.1 Key Features from** IK09 to IK08
44	December 27, 2023	Update section Error! Reference source not found. include Mifare Classic and Mifare DESFire Light Card; Update **1.1 Key Features** to include Buzzer Application; Add section **6.5.1 How to Play a Sequence of Tones.**
400	February 13, 2024	Updated **Figure 4-16 - Recommended Disassembly Procedure** to change the mounting hole dimension 1.336"[33.93mm] to 1.20"[30.5mm], Updated Ingress Protection Rating from 65 to 66 in **1.1 Key Features** and **Appendix A Technical Specifications.**
401	March 13, 2024	Updated section **4.3.1 About Connecting to a Host** and **Appendix A Technical Specifications** with updated guidelines regarding cable length and quality.
402	June 5, 2025	Add MIFARE Plus, remove MIFARE Lite in **6.7.5 How to Tap Contactless NFC Tags / MIFARE Classic / MIFARE DESFire /MIFARE Plus Cards and Send Pass-through Commands**; Update **Appendix A Technical Specifications** storage and operating relative humidity values from 5% to 90% RH non-condensing to Up to 90% RH non-condensing**.**

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1 Introduction

DynaProx and DynaProx BCR deliver the next generation in touchless payment acceptance. Both models come standard with contactless EMV and near field communication (NFC) technology for original equipment manufacturers (OEM), merchants, banks, and other developers looking to build a secure payment solution that accepts contactless EMV and NFC payments. Ideal for kiosks, vending machines, unattended payment terminals, and even countertop deployment with the optional stand, touchless payment and barcode scanning are made fast, reliable, and secure.

DynaProx and DynaProx BCR are equipped with the next generation of security and the MagneSafe® Security Architecture (MSA). The design and architecture meet the requirements for contactless EMV 3.0, PCI PTS POI v6.1, and support triple DEA encryption with DUKPT Key Management.

1.1 Key Features

DynaProx and DynaProx BCR are easy to install and configure, with key features that include:

- Contactless EMV 3.0 approved.
- PCI PTS POI v6.1approved.
- Optical reading for many 2D and 1D barcodes including PayPal and Venmo (DynaProx BCR model required).
- Transducer for audio alerts.
- User configurable audio commands to play a sequence of tones.
- USB (USB-C) or RS-232 interface
- Triple DEA encryption / DUKPT key management.
- Impact protection - IK 08.
- Ingress protection - IP 66.
- Apple Pay® / Apple Wallet® (Apple VAS protocol support).
- NFC Compatibility: Smart cards and contactless IC products, including MIFARE Classic / MIFARE DESFire /MIFARE Plus cards, with the ability to send pass-through commands.
- Optional countertop stand.
- Hard mounting points to match common kiosk and ATM bezel mounts.
- Flexible cable management.

1.2 Build for New Markets

Touchless payments are fast, convenient, and meet the needs of new growing markets. Major banks and card issuers are investing in contactless EMV cards and other barcodes. Combined with the rise of mobile wallets like Apple Pay, Samsung Pay, Google Pay, and others, there are major opportunities to deliver a reliable and affordable contactless EMV, NFC, and barcode reading device that is used in a variety of deployment scenarios.

1.3 Easier Integration

Designed to simplify development efforts, DynaProx and DynaProx BCR are available with either a USB or RS-232 interface (with power provided over USB or separately powered for RS-232) and are compatible with Windows and Android applications. The beeper provides auditory feedback to cardholders and operators delivering a more universal appeal. Contact a representative to find the best fit for your application and to request the software developer kits (SDKs) and application programming interfaces (APIs).

1.4 About DynaProx Components

Figure 1-1 shows the major components of DynaProx with barcode reader. Models without a barcode reader are identical to the diagram, but do not have a camera and do not have a QR code printed on the front face.
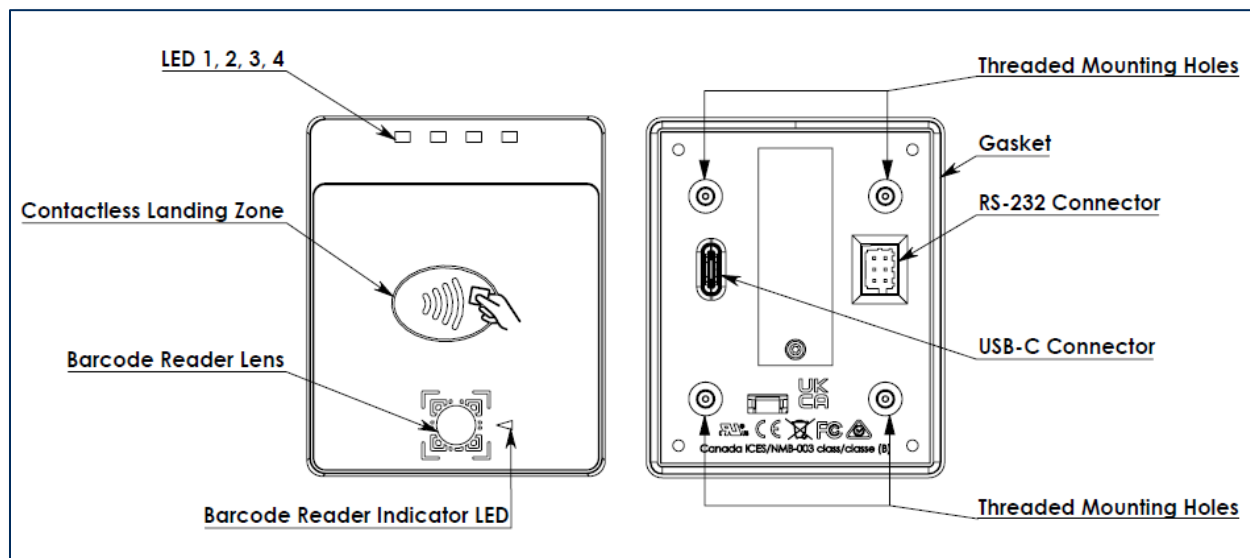
Figure 1-1 - DynaProx Major Components

1.5   Available Models and Accessories

Table 1-1 - Available Models and Options

Part No.	Description	Display	Connection(s)	Notes
21078013	DYNAPROX, PCI, BLACK, USB AND RS-232	None	USB-C, RS-232	MS Windows, Mac OS, Linux; Android Phone
21078028	DYNAPROX, PCI, BCR, BLACK, USB AND RS-232	None	USB-C, RS-232	MS Windows, Mac OS, Linux; Android Phone
21078043	DYNAPROX, PCI, BLACK, USB AND RS-232, COUNTERTOP STAND	None	USB-C, RS-232	MS Windows, Mac OS, Linux; Android Phone
21078044	DYNAPROX, PCI, BCR, BLACK, USB AND RS-232, COUNTERTOP STAND	None	USB-C, RS-232	MS Windows, Mac OS, Linux; Android Phone

Table 1-2 - DynaProx Accessories

Part #	Description	Accessory Notes
1000007268	CABLE, USB-C 90° RIGHT ANGLE TO USB TYPE A MALE USB 2.0, 6FT	Included with DynaProx products
1000005076	CABLE, USB-C 90° RIGHT ANGLE TO USB TYPE A MALE USB 2.0, 3FT	Optional, specify in order
21078012	DYNAPROX, KIT COUNTERTOP STAND	Kit only
1000007189	DynaProx Gasket	One (1) included with each DynaProx products. Replacement gaskets specify in order.

1.6   About Terminology

In this document, DynaProx products are referred to as the **device**. They are 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 customer service representative, while the device interacts with the **cardholder** (even if the cardholder is using a virtual representation of the card account, such as a smartphone).

2   Planning and Preparation

The guidelines in the following sections are intended to help project planners and system administrators plan for the physical and logical requirements of deploying and using DynaProx products. The most effective way to ensure smooth deployment of a solution is to consider these factors before receiving the device.

2.1   Logistical Planning

- Determine what type of **host** DynaProx will connect to. For a list of supported device types and operating systems, see **Table 1-1**. When planning, be sure to include any additional support or devices required by the host and DynaProx, such as physical locations, mounting, power connections, and charging cradles.

- Determine what **connection** the host will use to communicate with the device. Depending on the device model (see **Table 1-1**), the connection can be USB or RS-232.

- Determine what **software** will be installed on the host and how it will be configured. Software can include the operating system, transaction processing software, security software, and so on. If teams other than the software development team will be involved in preliminary device testing, MagTek recommends the solution development team provide a smoke test harness early in the development process to allow basic testing (for example, communication adapter testing). In addition, be sure to plan for any additional support required by the software, such as software licenses and network connections. Information about software is provided in section **4.2 About Host Software**.

- Determine how the device will be physically presented to the cardholder. If the device is mounted, make sure there is adequate clearance for cardholders to swipe, insert, and tap. If the solution design includes metal objects anywhere near the device, including metal enclosures, make sure that at all points the metal is no further forward than 15mm below the face of the device. Proximity to metal can adversely affect the device's performance.

- Determine how the device should be configured and specify that configuration when ordering the device. A full list of configurable options is documented in ***D998200489 DynaProx Programmer's Manual (COMMANDS)***.

- Select and configure a secure workstation that advanced operators will use to configure and/or update the device. The workstation must be configured as follows:
    - Available USB port.
    - A secure means of obtaining files, either via the network (such as SFTP) or via removable media, such as USB flash drives. This is required for installing software tools, copying firmware files, etc. If you are using Magensa Services, make sure the secure workstation has an internet connection and has all the required Magensa Remote Services software components installed.
    - ***1000007406 DynaFlex, DynaProx Test Utility*** installed, which advanced operators can use to configure and test the device.
    - ***1000007405 DynaFlex, DynaProx Firmware Upload Utility*** installed, which advanced operators can use to update the device's firmware.

- Determine the final set of tools advanced operators will use to configure, test, and update the device. This documentation uses the ***1000007406 DynaFlex, DynaProx Test Utility*** as an example for configuring the device; it can be used for initial pre-deployment testing and development, and as sample code showing how to communicate with the device, but the full solution may call for customized, solution-specific software for configuring the device and updating firmware.

- Determine how to **inspect** devices upon arrival, upon installation, and periodically during live usage, to ensure malicious individuals have not tampered with them. Details about inspection are provided in section **4.1 About Inspection**.

- Develop procedures for maintaining the device(s). Detailed guidance is provided in section **7 Maintenance**.

- Determine how to train operators. For example, training may include information extracted from section **5 Configuration**, section **6 Operation**, and section **7 Maintenance**.

- Review the device's PCI Security Policy, posted to the PCI web site www.pcisecuritystandards.org under **Approved PIN Transaction Security (PTS) Devices**, for additional information about using the device securely.

3 Handling and Storage

⚠️ **CAUTION**

Proper handling of the device throughout delivery, assembly, shipping, installation, usage, and maintenance is very important. Not following the guidelines in this document could damage the device, render it inoperable, and/or violate the conditions of the warranty.

3.1 Handling to Avoid Damage

Upon receiving the device, inspect it to make sure it originated from an authentic source and has not been tampered with. For details, see *D998200502 DynaProx / DynaProx BCR Device Inspection*, available from MagTek.

From device delivery through assembly, shipping, installation, usage, and maintenance, the device must not be exposed to conditions outside the ratings in **Appendix A Technical Specifications**.

If the device is exposed to cold temperatures, adjust it to warmer temperatures gradually to avoid condensation, which can interfere with the operation of the device or cause permanent damage.

Do not drop or shake the device.

For information about ongoing maintenance of the device, such as cleaning, see section **7 Maintenance**.

3.2 Handling to Avoid Accidental Tamper

DynaProx products implement active tamper detection, which uses a small amount of electricity even when the device is completely powered off. When unpowered by an external power supply, the device powers its active tamper detection circuitry using its non-rechargeable backup battery. This provides 5 years of backup shelf life across the entire life of the device. If the backup battery is allowed to completely discharge, the device's tamper detection engages and locks down the device, and it must be returned to the manufacturer to reset.

To avoid accidental tamper events and to optimally condition the battery, follow these precautions:

- Temperature is the most critical factor in extending battery life and preserving battery charge. Store the device at the lowest reasonable temperatures within its specified storage temperature range (see **Appendix A Technical Specifications**). Storing at temperatures between -30°C to 85°C (-22°F to 185°F) – DynaProx BCR -30°C to 70°C (-22°F to 158°F).

- Do not drop or shake the device.

- Do not attempt to disassemble the device.

4   Installation

Installing DynaProx products is straightforward: The manufacturer or acquirer configures the preferred settings, keys, and 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 inspecting, connecting, and installing DynaProx products.

4.1   About Inspection

Before unpacking the device, it is important to inspect its secure packaging to make sure it has not been tampered with in storage or in transit. MagTek provides details for inspecting the integrity of the device's secure packaging in *D998200501 DynaProx / DynaProx BCR Package Inspection*.

It is important to thoroughly inspect a new device before deployment, and regularly inspect devices in live usage (including its immediate surroundings) to make sure malicious individuals have not tampered with it. MagTek recommends conducting inspection training for all device operators, and an inspection schedule with checkpoints in place to make sure operators are performing inspections as specified and as scheduled. MagTek provides an easy-to-follow device inspection reference *D998200502 DynaProx / DynaProx BCR Device Inspection*.

4.2   About Host Software

In any solution, DynaProx products are connected to a host, which must have software installed that knows how to communicate with the device, and which is capable of processing transactions. To set up the host to work with DynaProx, follow the installation and configuration instructions provided by the vendor of the host or the host software. For information about developing custom host software, see section **8 Developing Custom Software**.

4.3   Connecting to a Host

4.3.1   About Connecting to a Host

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

4.3.2 How to Connect DynaProx to a Host via USB
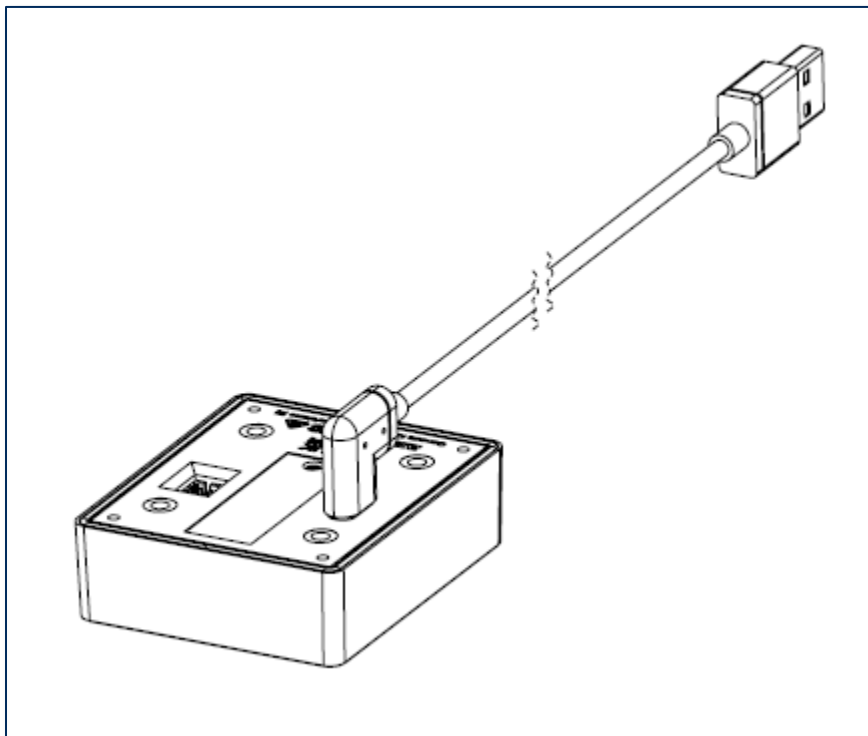
Figure 4-1 - Connecting to a USB Host

To connect DynaProx products to a USB host using the USB-C port, follow these steps (for reference see **Figure 4-1** and section **1.4 About DynaProx** Components):For best results, use the cable that is included with the device or another cable from **Table 1-2 - DynaProx Accessories** on page **8**. These cables are designed specifically for DynaProx products and include ferrite shielding at both ends of the cable to reduce emissions and interference. If the solution design requires an alternate cable, contact MagTek for assistance with ferrite selection and placement, and with connector over mold design.

Note: A poor quality cable, or cable longer than 12ft in length, can result in unexpected reader resets. Refer to **Table 1-2 - DynaProx Accessories** for cable options.

1) Connect the USB-C end of the cable to DynaProx.
2) Connect the other end of the USB cable to the host's USB port.
3) As soon as the device starts receiving power through USB, it automatically powers on.
4) If the specific device serial number you are connecting has not been connected to the host before, Windows system tray on the host reports it is **Setting up a device**, see **Figure 4-2 – Device Setup**. When installation is complete (approximately 30 seconds later depending on the host), Windows reports **Device is ready**, (see **Figure 4-3 – Setup Complete)** and the device shows in Windows Device Manager under **Human Interface Devices** (**see Figure 4-4 – Windows Device Manager**) as two devices: **HID-compliant vendor-defined device** (see **Figure 4-5 – HID Compliant Vendor-defined Device Properties**) with VID **0801** and PID **2020**, and **USB Input Device**.
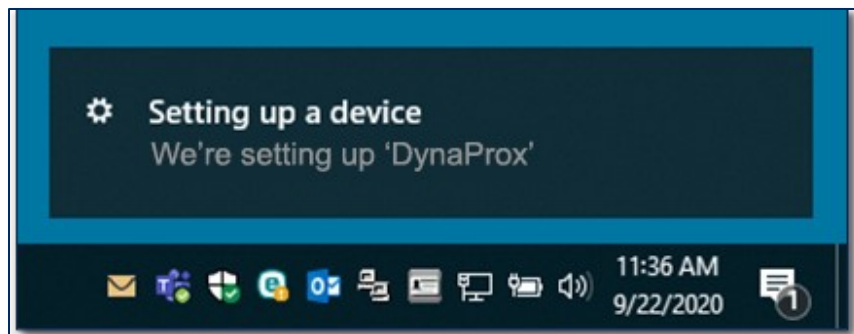
Figure 4-2 – Device Setup
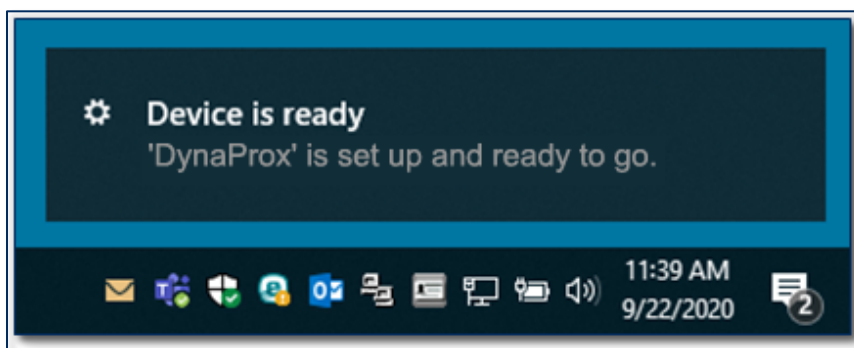
Figure 4-3 – Setup Complete
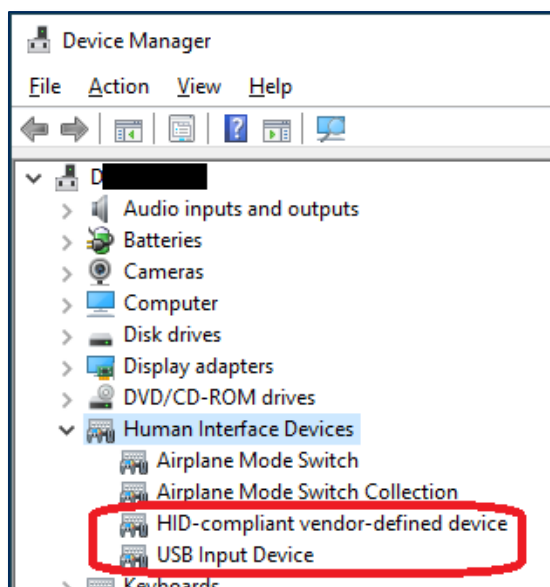
Figure 4-4 – Windows Device Manager
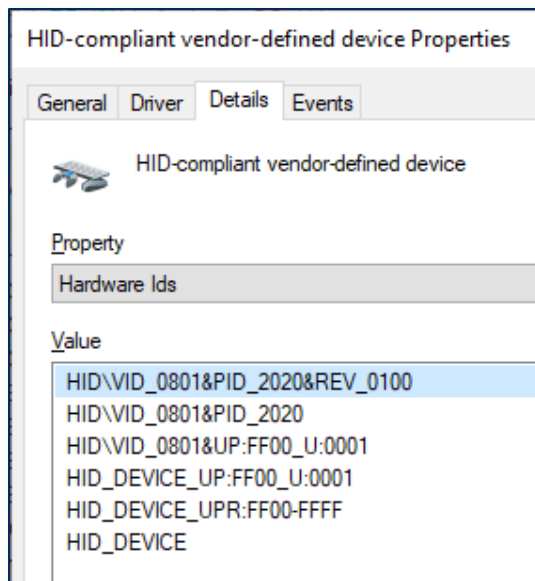
Figure 4-5 – HID Compliant Vendor-defined Device Properties

5) The operating system may put the device into **USB Suspend** mode. DynaProx does not support USB Suspend mode since this device relies on USB full power support.

4.3.3 How to Connect DynaProx to a Host via RS-232

The RS-232 interface on DynaProx will provide a UART interface at RS-232 signal levels. No flow control is provided. The signals provided are on J1 of DynaProx and are listed below. **See Table 4-1 - RS-232 Signals.**

Table 4-1 - RS-232 Signals

DynaProx		Comment
PIN/WIRE	**SIGNAL**	
1	5V	800 mA recommended
2	5V	
3	TXD	output of DynaProx
4	RXD	input to DynaProx
5	GND	
6	GND	

4.3.3.1 RS-232 Cable

The RS-232 cable will be customer dependent. A sample cable can be provided that has the mating connector for DynaProx and color-coded wires. See **Figure 4-6 - Cables and Connectors.**
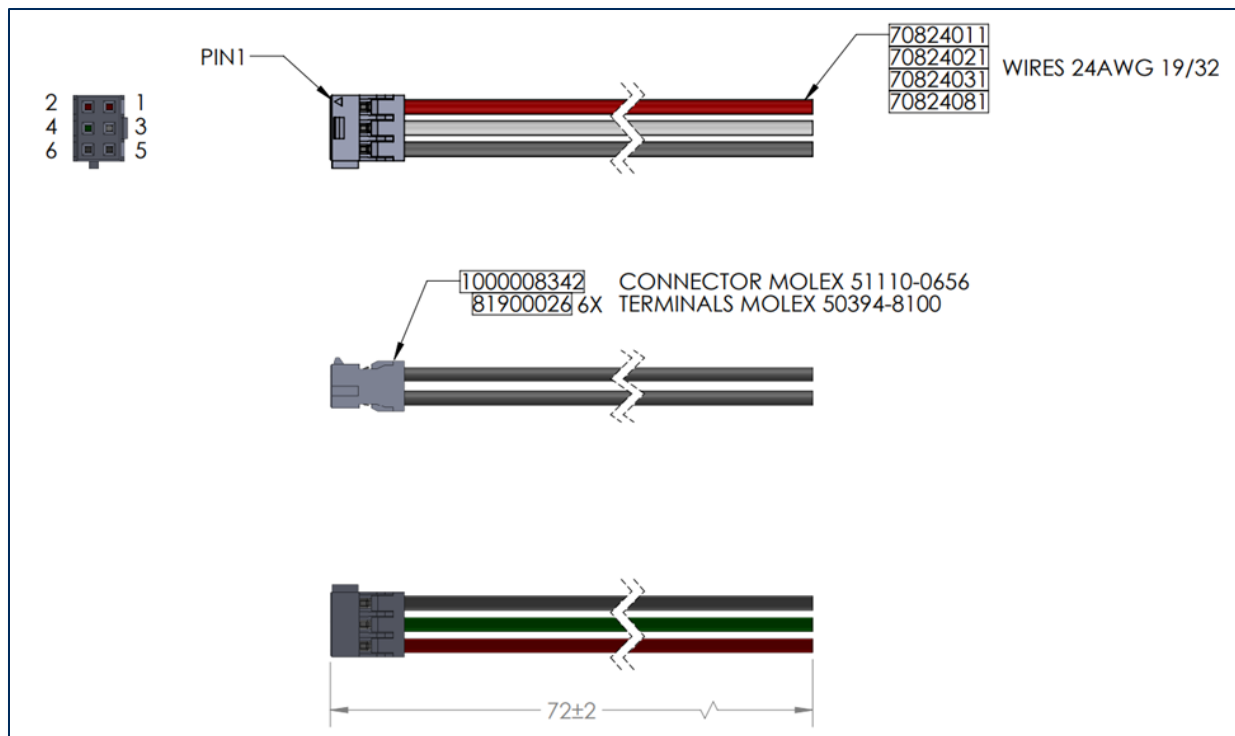
Figure 4-6 - Cables and Connectors

4.3.3.2 Chassis Ground

The Chassis ground connection will also be a custom cable depending on the customer's requirement.

4.4 Mounting

4.4.1 About Mounting

DynaProx products are designed to provide flexible mounting options:

- The device can be mounted to custom mounting brackets or mounted in an enclosure as part of a larger solution design.
- The device can be mounted to the optional stand for countertop use.

4.4.2 How to Mount DynaProx

⚠ CAUTION
This document describes how to use DynaProx securely. Using the device in any way other than the approved methods described in this document invalidates the PCI PTS approval of the device. **Not following the guidelines in this section could damage the device, render it inoperable, and/or violate the conditions of the warranty.**

This section provides information and guidelines for designing the mechanical aspects of a solution that incorporates DynaProx products. MagTek strongly recommends vetting and testing solution designs

before finalizing and deploying them, to make sure the design meets all requirements (e.g., functional, legal, security, certification, safety, and so on).

When designing the mechanical portions of a solution that incorporates DynaProx products, consider the following:

- Review section **1.4 About DynaProx Components** for an overall introduction to the device's physical features and what they are called.
- Review **Appendix A Technical Specifications**.
- Review the information below about overall device dimensions and mounting hole locations and use.
- Review any additional requirements from other agencies, such as PCI and EMV solution certification requirements, safety ordinances, and so on, which may introduce additional constraints to the design.

Overall dimensions of the device are shown in **Figure 4-7**. On request, MagTek can provide a 3D model of the device's envelope to assist with the mechanical portion of solution design. MagTek strongly recommends building and testing prototypes with actual devices before finalizing the solution design.
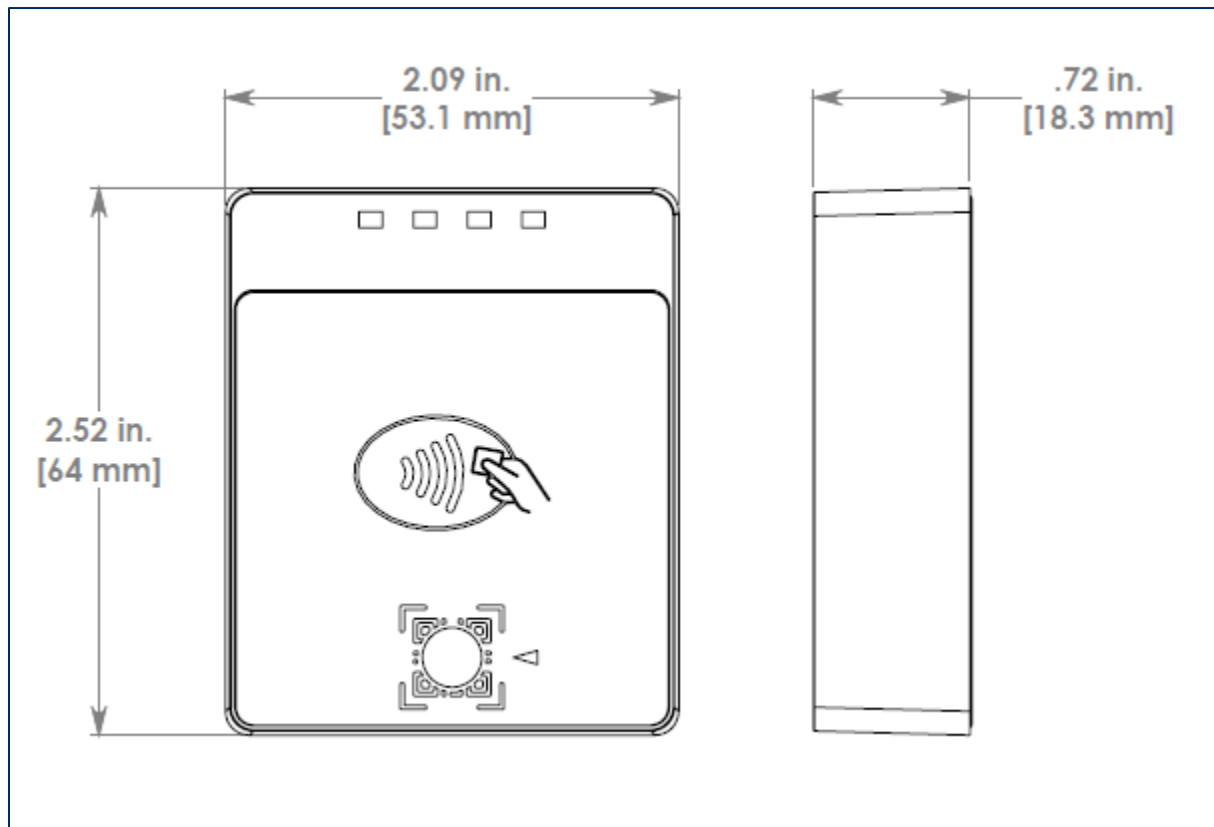
Figure 4-7 - DynaProx Overall Dimensions

The screw hole placement on the bottom of DynaProx products is detailed in **Figure 4-8**. The holes are designed to accommodate screw size **M4 x 0.7mm** and a maximum screw depth of 0.315 inches (8mm) into the device. The recommended torque range for installing the screws is 20 to 22 in-lbs. (2.3 to 2.5 N-m).

When mounting DynaProx, make sure gasket is seated properly to ensure IP65 rating, see **Figure 4-9**.

The suggested panel cutouts for the USB and RS-232 connectors are shown in **Figure 4-10** with a DynaProx shown for reference. The dimensions for the suggested panel cutouts are shown in **Figure 4-11**.
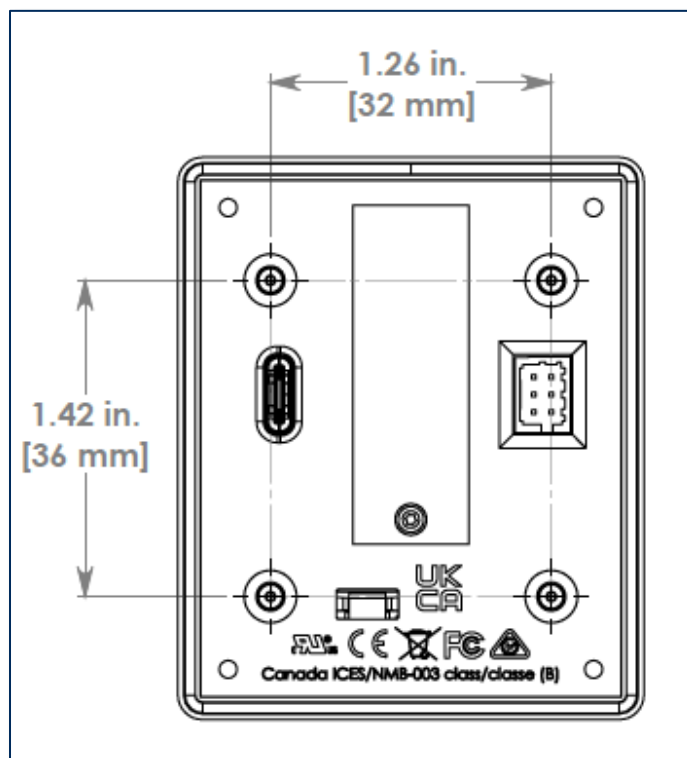
Figure 4-8 - DynaProx Mounting Hole Locations
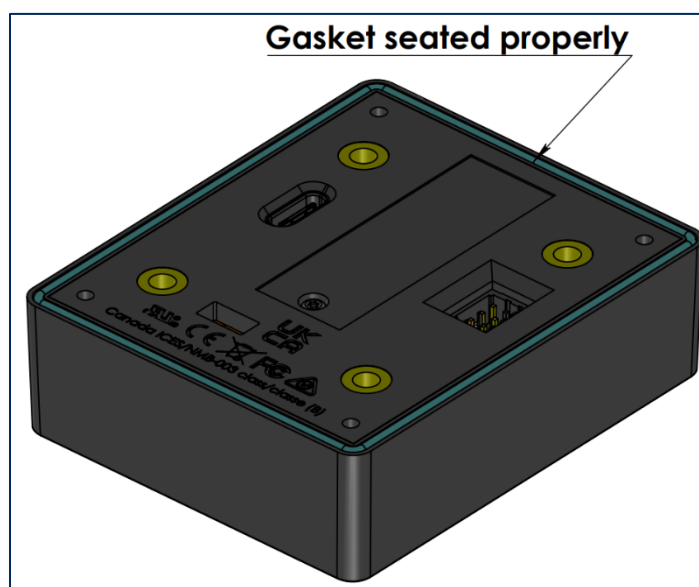
Figure 4-9 – DynaProx Gasket

Figure 4-10 – DynaProx Suggested USB and RS-232 Panel Cutouts
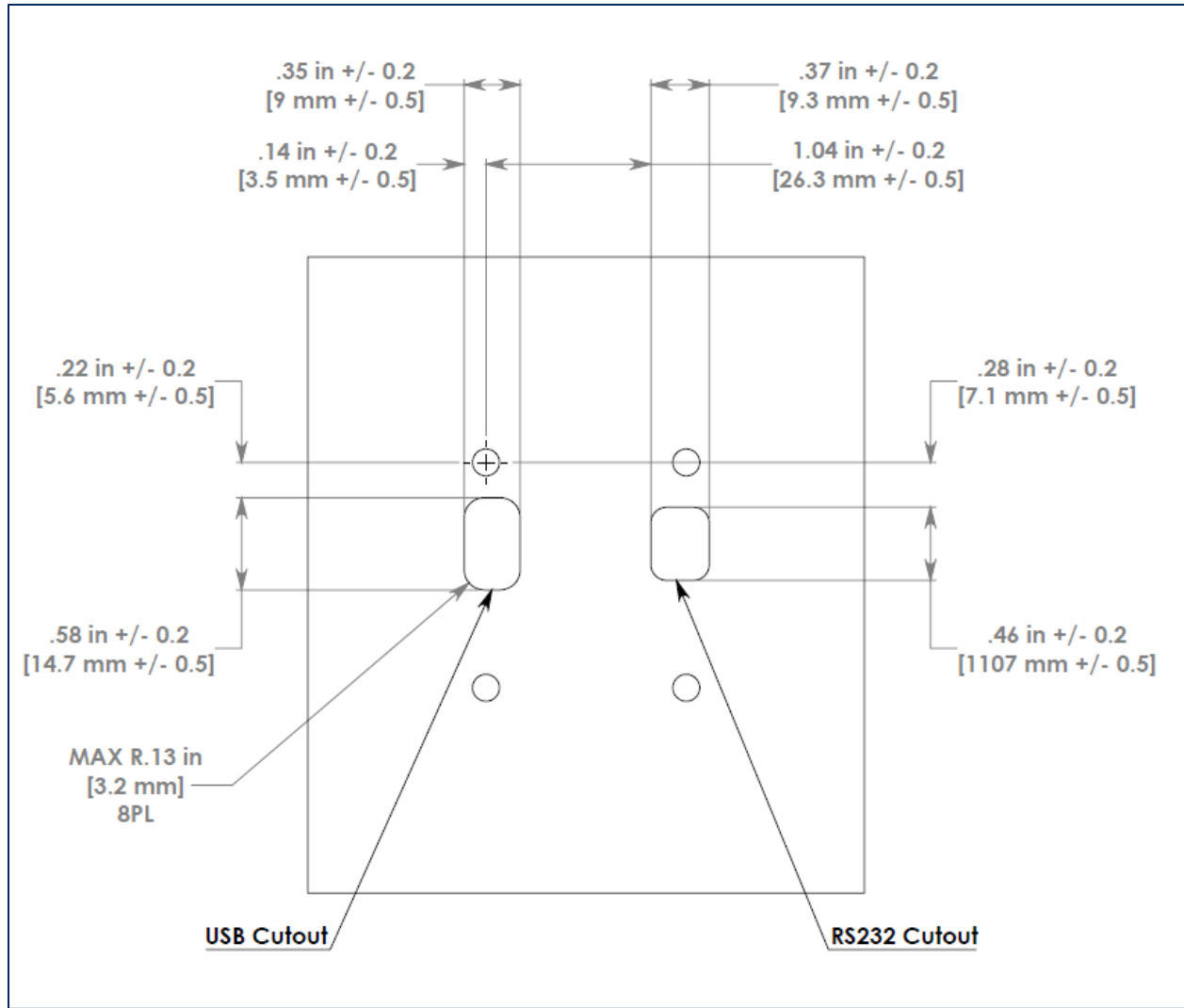
Figure 4-11 – DynaProx Suggested USB and RS-232 Panel Cutout Dimensions

When designing the enclosure or mounting bracket, make sure there is adequate clearance for cardholders to tap or users to present a bar code. If the solution design includes mounting to metal surfaces, there will typically not be any impact to performance or card reading range. If the design of the enclosure includes mounting the DynaProx such that the top surface is flush with adjacent metal on the same plane, the range of the contactless reader may be reduced. By keeping the card reading plane a few millimeters above any adjacent metal surfaces or providing a few millimeters of gap between the reader and adjacent metal will assure acceptable card reading performance. Proximity to metal can reduce the device's reading range.

4.4.3 How to Mount the Stand

Major Components, see **Figure 4-12 - DynaProx Major Components.**
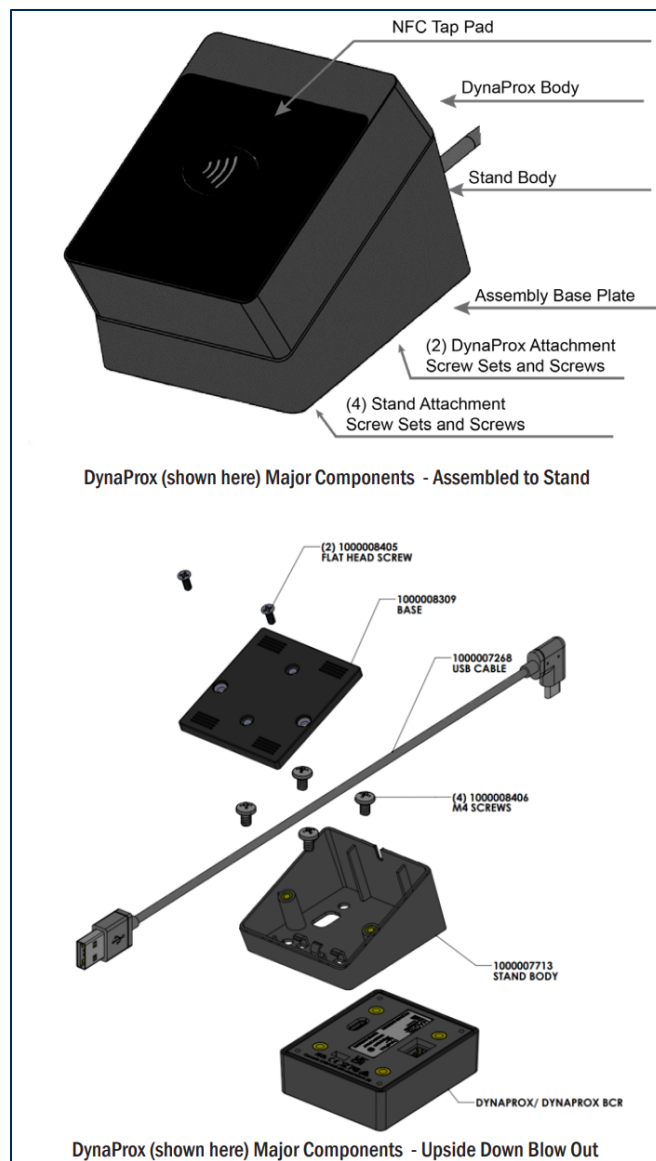
Figure 4-12 - DynaProx Major Components

Stand Contents:
Stand Body: The body of the stand. Angled for better ergonomics.
Cable Channel: Allows the cable to be channeled out the back of the stand body.
(4) M4 Screws: Attaches the stand body to the DynaProx device
(2) Flat-head Screws: Attaches the base plate to the stand body.
Base Plate: Bottom of stand, can attach the stand to counter tops
Installation of DynaProx Stand
1. Place the DynaProx face down on a clean, soft surface to avoid scratching the front face of the device.
Using minimal toque, use (4) M4 screws to attach the stand to the body.
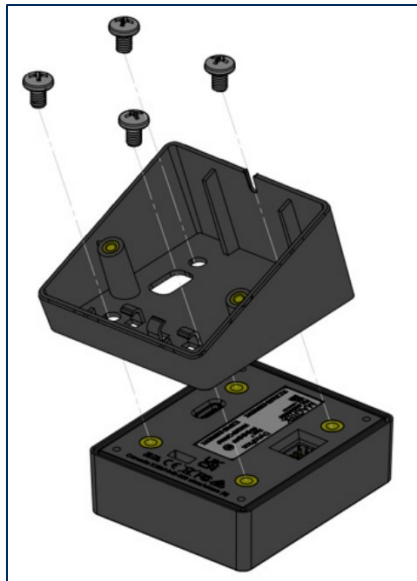
Figure 4-13 - Suggested Installation for DynaProx Stand

2. Insert the cable and connect securely to the DynaProx device. Clip the cable securely into the cable management hooks. Channel the cable outside the back end of the stand body.
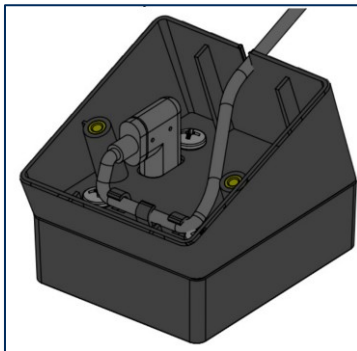
Figure 4-14 - Cable Management

3. Align the assembly base plate and using the (2) flat-head screws, screw the base plate to the stand body. See **Figure 4-15 – Baseplate Installation.**
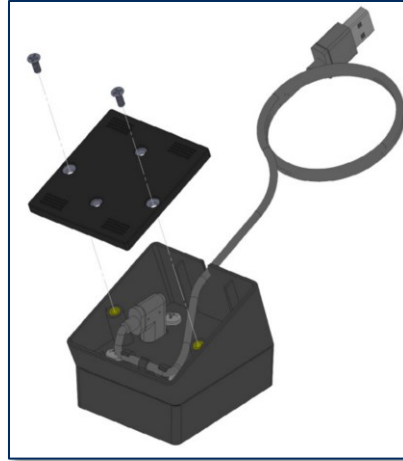
Figure 4-15 – Baseplate Installation

4. Assembly is complete. Additionally, you can secure the base plate to almost any surface using (2) additional screws, not included.

Securing DynaProx Stand to Surface

Follow Steps 1 through 2, then –

    a.   Place baseplate on the location where you want to secure the device. Trace the baseplate and mark the two screw set locations (Drawn Outline). Remove the baseplate and drill down through the surface, checking to make certain everything is clear beneath.

    b.   Attach the baseplate to the stand body following step 3. Then align the surface to the tracing.

    c.   Using (2) M4 x 0.7mm thread pitch (not included) screws, screw up through the pre-drilled holes to the baseplate. Screws should be long enough to go through the surface and no more than 0.25" into the stand body.
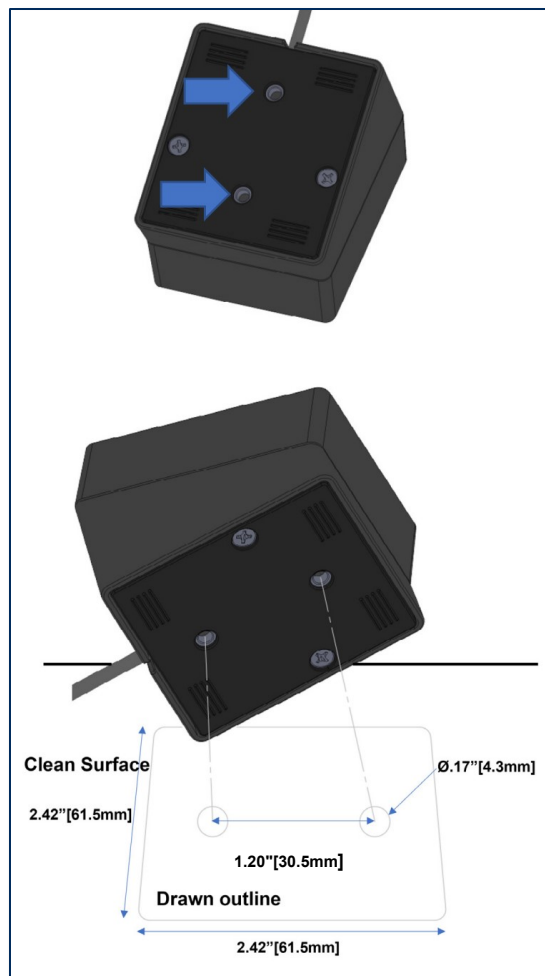
Figure 4-16 - Recommended Disassembly Procedure

Disassembly

Repeat assembly in reverse order to remove device from counter installation and stand. See **Figure 4-16 - Recommended Disassembly Procedure.**

5   Configuration

The device does not have an on-screen configuration interface. However, it does have settings the host can change using commands. These settings are documented as **Properties** in *D998200489 DynaProx Programmer's Manual (COMMANDS)*.

6   Operation

6.1   About Operating Modes

During operation, DynaProx devices transition between distinct operating modes, which are important for operators to understand so they can properly control the device:

- **Powered Off Mode** is the shipping and storage mode of the device. No external power is applied to the device through the USB cable or RS-232 cable. In this mode, the device consumes practically no power. To set the device from Powered Off mode to Active mode, connect the device to USB power or RS-232 power.

- **Active Mode** is the device's normal "awake" state when it is in use. In this mode, LEDs are powered on, and the device is ready to receive commands from the host. To set the device from Active mode to Powered Off mode remove power.

6.2   Operation Overview

During normal operation, the operator initiates a transaction from the host, and the cardholder interacts with the device. Transaction types may include new accounts, teller window applications, checking, savings, mortgages, retail transactions, or any other type of transaction where there is interaction between the cardholder and the operator.

For each transaction type, the host software directs the cardholder, and the transaction flow on the device may differ depending on what the host software specifies and what the cardholder does. Section **6.6.3 About Maintenance** Reset

For full host control, the device should not be allowed to run for $>= 23$ hours without a reset. To accomplish this, have the host application send a reset command twice a day separated by at least one hour.
Example: Host software resets the device at 1 AM and 3AM. This keeps the device from initiating its own reset.

Card Reading provides examples of the cardholder experience for each type of payment. If the device cannot read payment data, the host software may prompt the cardholder to repeat the action or reject the transaction.

6.3   Introduction to User Interface

As mentioned in section **1.4 About DynaProx Components**, DynaProx models equipped with a barcode reader (BCR) have a similar physical appearance as models without a BCR, as shown in **Figure 6-1**. BCR models are equipped with a camera and a QR code located on the front side of the device.

- DynaProx devices have a user interface composed of two elements: a visual indicator consisting of four mono LEDs and a beeper that produces audible alerts.

- DynaProx BCR devices have a user interface composed of three elements: a visual indicator consisting of four mono LEDs, a barcode reader, and a beeper that produces audible alerts.

- DynaProx devices do not feature any input components such as buttons or touch screens.
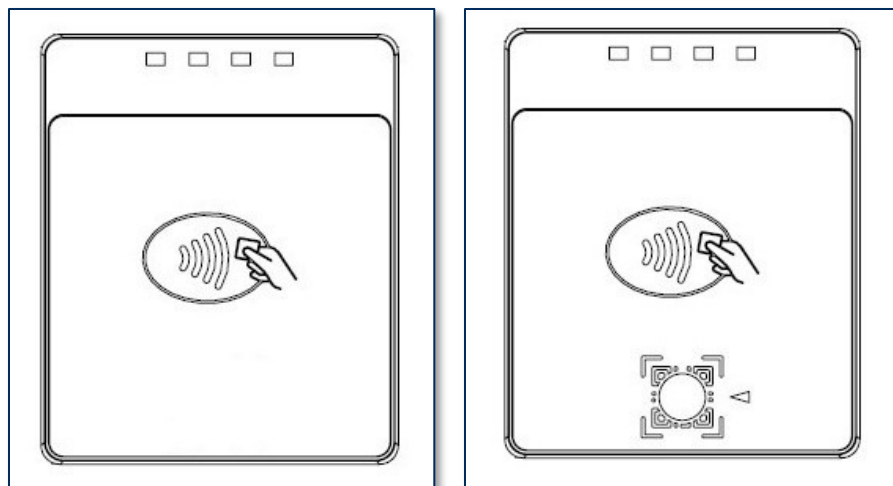
Figure 6-1 – DynaProx and DynaProx BCR

6.3.1 Component Details

1. LED Ordering

The arrangement of the four mono LEDs on DynaProx and DynaProx BCR devices is illustrated in **Figure 6-2**. The LEDs are labeled LEDs 1 to 4 and are ordered from left to right on the device.
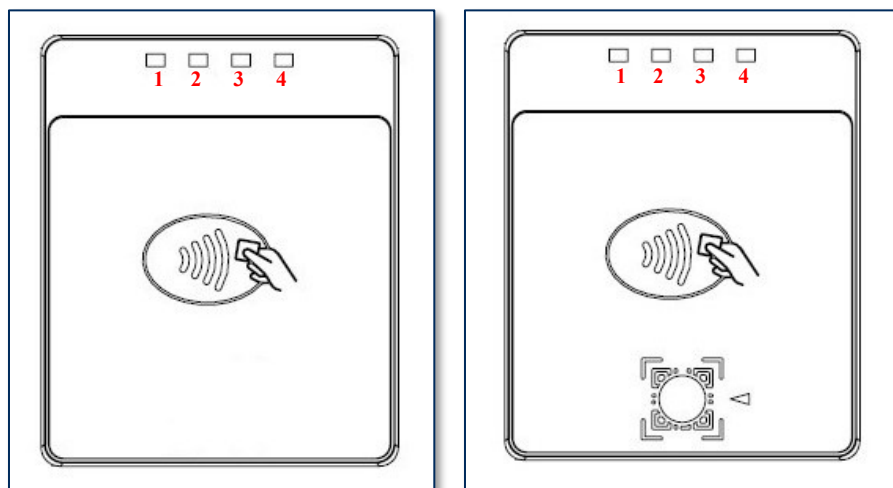
Figure 6-2 - LED Ordering

2. LED Status

   When DynaProx is powered on, its LEDs will illuminate green, when it is powered off, the LEDs will remain unlit. **Figure 6-3** illustrates the on/off status of the LEDs.

Figure 6-3 - LED ON/OFF

3. BCR Status

DynaProx devices equipped with a bar code reader have a status light that indicates whether the barcode feature is powered on or off.
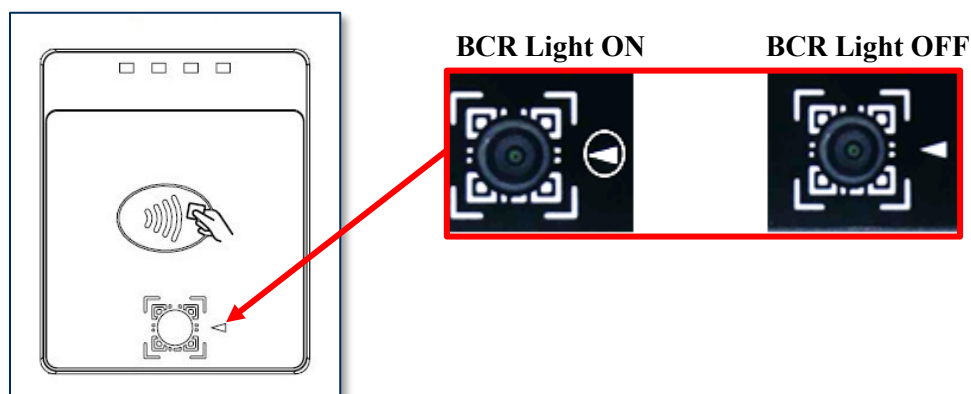
Figure 6-4 - BCR Light

4. Beeper Alert

All DynaProx devices are equipped with a beeper that produces a short beep lasting for half a second and a long beep that lasts for one second.

6.3.2   Modes of Operation

This section contains information regarding the operational modes of DynaProx's LEDs, beeper, and BCR light. It is important to note that DynaProx devices are not equipped with batteries. If there is no power supply to the device through the USB cable or RS-232 serial port, all LEDs, along with the BCR light, will not illuminate. In such instances, the user interface will resemble the device as it appears in **Figure 6-1**.

6.3.2.1 Power On via USB Cable

When the device USB cable is connected to the host USB port, a brief beep will sound and all four LEDs will turn on for half a second, as shown in **Figure 6-5**. Following this, LED 1 and LED 2 will remain illuminated, while LED 3 and LED 4 will remain unlit. After a duration of 10 seconds, all LEDs will turn off, and the device will enter an idle state. This occurs because the host sets the USB port into suspension mode, prompting the device to enter an idle state.
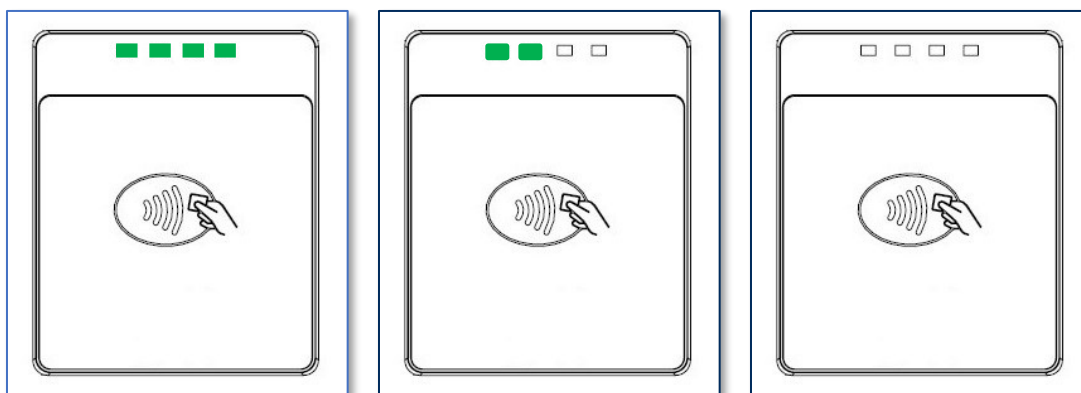
Figure 6-5 – LED Power on Sequence – USB Power On

6.3.2.2 USB Enumeration

When DynaProx is in an idle state, it can be detected by a host through the USB HID port see **Figure 6-6**. After the host has connected to DynaProx, LED 1 and LED 2 will stay on. The device is in Ready State.
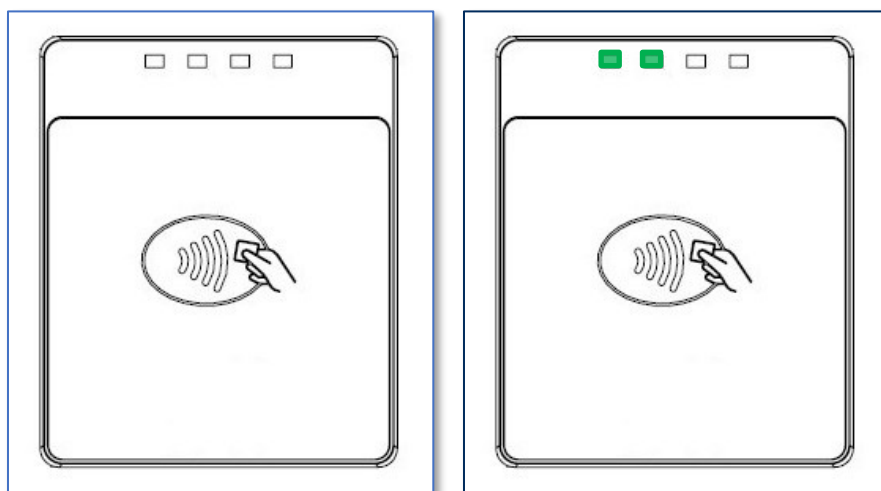
Figure 6-6 - LEDs Status (Idle State) Before Host Detection and LED Status (Ready State) After Connecting to Host

6.3.2.3 Payment Transaction

When the device is in ready state, two LEDs will be illuminated see **Figure 6-7**. When a card is detected only LED 1 will be on. If the device has a BCR and it is enabled, the BCR light will also be turned on see **Figure 6-8**.
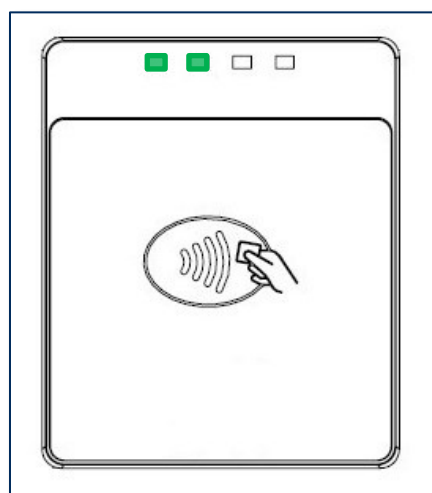
Figure 6-7 - Ready State
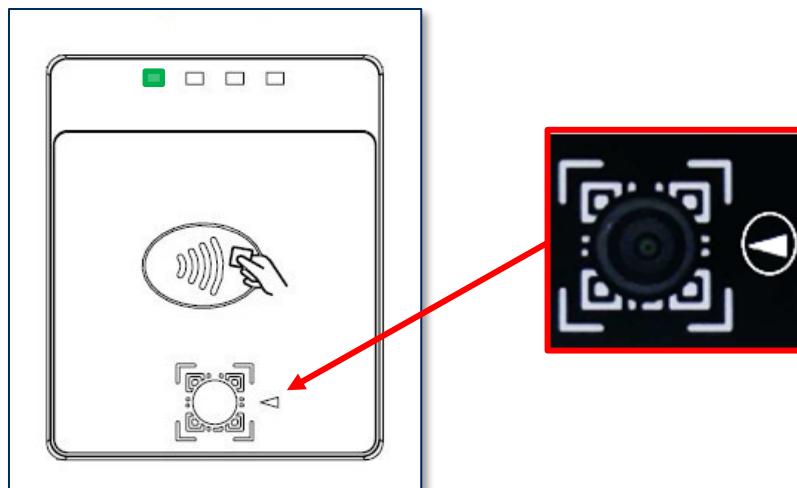
Figure 6-8 – Card detected.

6.3.2.4 Payment Transaction Successful

When a card is read, all four LEDs will turn on in sequence (1, 2, 3, and 4) followed by a long beep, indicating a successful transaction, see **Figure 6-9**. After a successful transaction, the device will return to the ready state when the transaction is complete, see **Figure 6-10**.
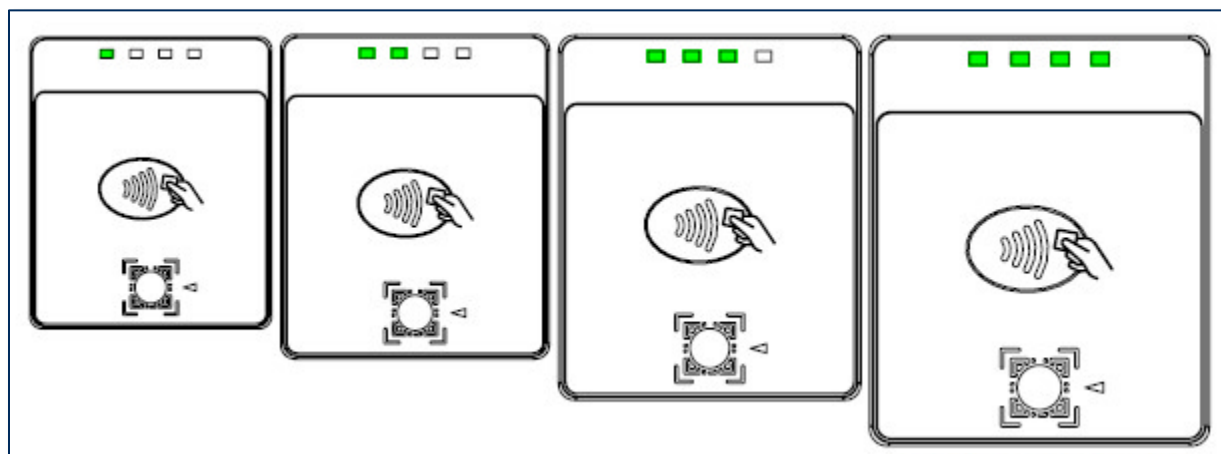
Figure 6-9 – LED Sequence – Payment Transaction Successful
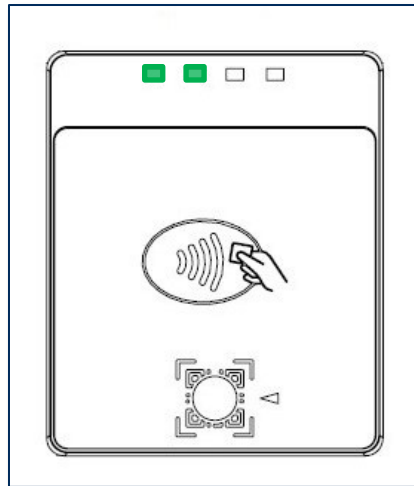
Figure 6-10 – Return to Ready State After Successful Transaction

6.3.2.5 Payment Transaction Unsuccessful

When the device is in ready state, two LEDs will be illuminated see **Figure 6-11**. When a card is detected, only LED 1 will be turned on. If the device has a BCR and it is enabled, the BCR light will also be turned on see **Figure 6-12**.
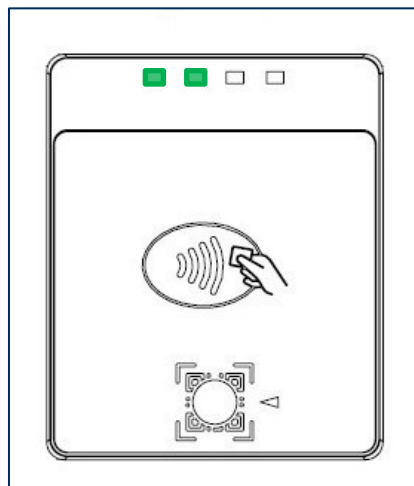
Figure 6-11 - Ready State
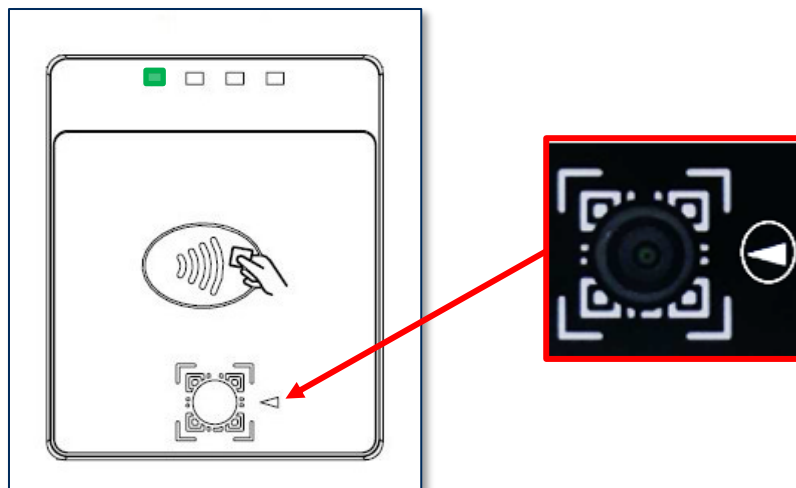
Figure 6-12 – Card Detected

In the event of a failed or canceled transaction, LED 1 will stay illuminated, and the device will emit two short beeps. If the device is equipped with a BCR, its light will also be on, as shown in **Figure 6-13**. The device will then return to the ready state, as demonstrated in **Figure 6-14**.
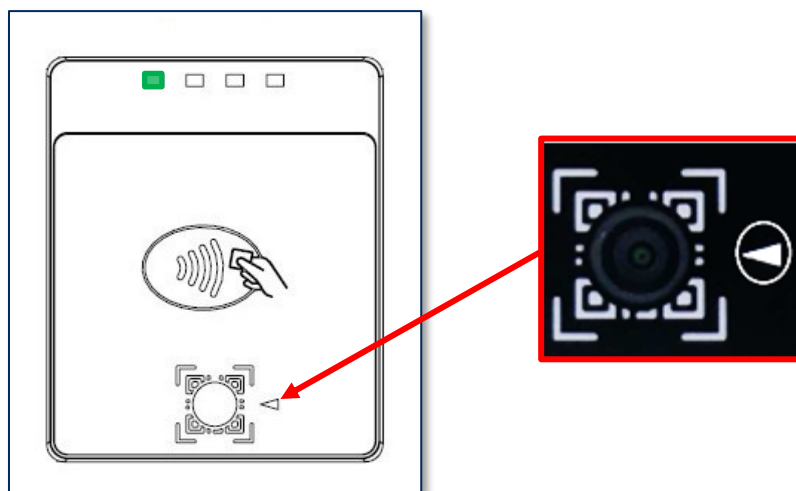
Figure 6-13 - Payment Transaction Failed
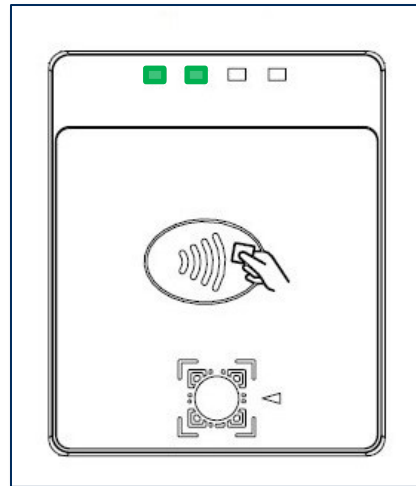
Figure 6-14 - Ready State

6.3.3 USB Power Supply

Upon being connected to USB power (after a delay of three seconds), the device will emit a short beep, and all four LEDs will turn on for half a second, as shown in **Figure 6-15**. The device will then return to the Ready State.
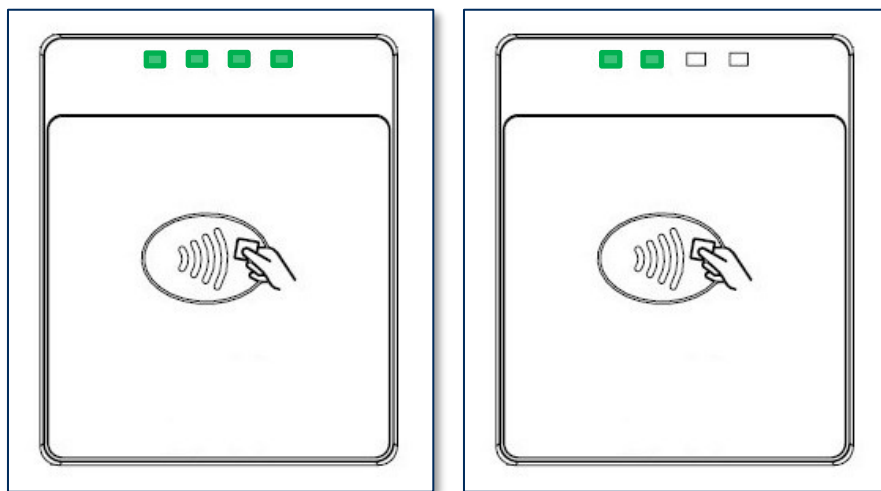
Figure 6-15 - Device Connected to USB Power

6.3.4 RS-232 Power Supply

Upon being connected to RS-232 power (after a delay of three seconds), the device will emit a short beep, and all four LEDs will turn on for half a second, see **Figure 6-16**. The device will then return to ready state.
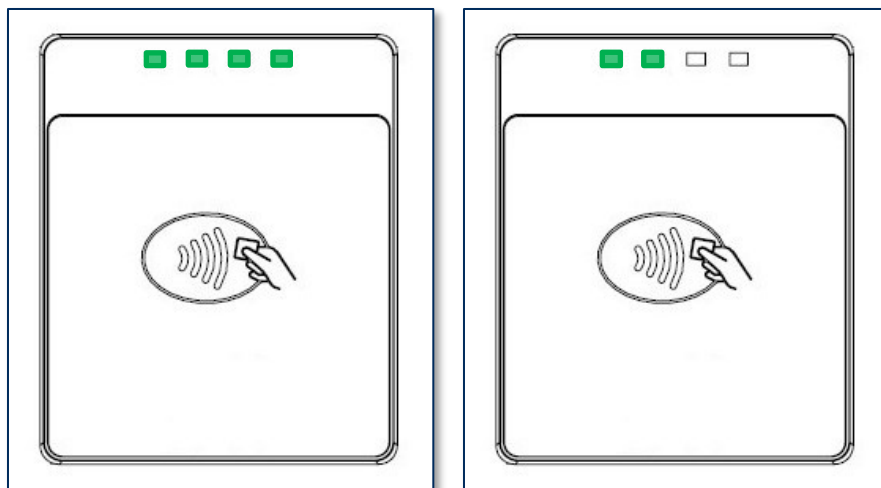
Figure 6-16 - Successful Connection to RS-232 Power Supply

6.3.5   Adding an RS-232 Power Supply

While in an idle state see **Figure 6-17**, as described in section **6.3.2.1 Power On** , if an RS-232 power supply is connected to the device, it will remain in the idle state.
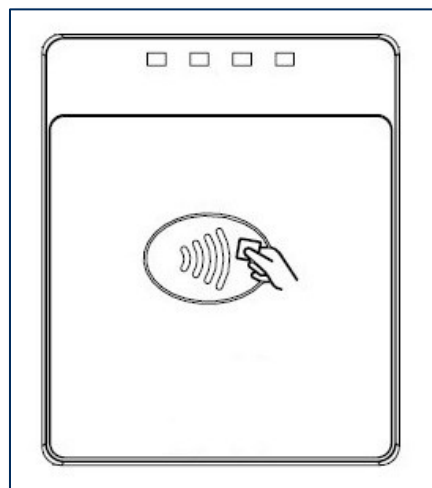
Figure 6-17 - Device in Idle State Before RS-232 Power Supply Connection

When the device is in a ready state, as explained in section **6.3.2.1 Power On** , connecting an RS-232 power supply to it will not change its state and it will remain in the ready state see **Figure 6-18**.
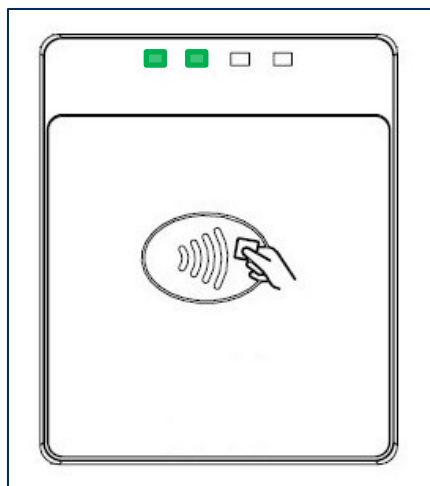
Figure 6-18 - Ready State

6.3.6 Event Notification Mode

When the device is configured in Event Notification Mode, the user interface will have the same appearance as depicted in **6.3.2.3 Payment Transaction**.

6.3.7 Bar Code Read Only

At present, no user interface elements such as LEDs or beeper sounds have been established for DynaProx.

6.4 About the Status LEDs

DynaProx provides four Mono LEDs (see section **1.4 About DynaProx** Components), numbered LED1 through LED4, which report the device's current operating status.

- The meaning of each LED depends on the device's operating mode. See section **6.1 About Operating Modes** and Error! Reference source not found. Error! Reference source not found.. Most of the time, operators will check the device's status using the LEDs when it is in **Active Mode** while the device is not performing a transaction.

- LED blinking patterns have specific meanings as well, as described in **Table 6-**. A blinking LED generally means the device is actively doing something to change the state that the LED is indicating, and solid indicates a persistent state that would require an operator or cardholder to take action to change. One major exception is a device-wide functional failure state, such as a tamper state, where all LEDs flash urgently to call the attention of an advanced operator to intervene.

In this manual, specific blinking patterns are described in more detail in the sections where they are relevant. For example, information about how the LEDs show the device's connection status is in section **4.3 Connecting to a Host**.

Table 6-1 - DynaProx LED Allocation

In This Context	LED1	LED2	LED3	LED4
Active Mode, not armed for a tap transaction	Power	Connection	Reserved	Card Read Result
Active Mode, armed for a tap transaction	Armed for Tap	Tap Read Progress	Tap Read Progress	Card Read Result

In This Context	LED1	LED2	LED3	LED4
Device-wide failure	During major failures (such as tamper), **LED1-LED4** report the nature of the failure based on the most likely steps required to resolve it.			

Table 6-2 - DynaProx LED Patterns

Color	Means
Solid ●●●●	**Solid** LEDs generally require an operator or cardholder to take action to change the state the LED is reporting. Example: Host is connected. Cardholder or host would have to disconnect. Example: Host is disconnected. Host would have to initiate connection.
Blinking ◎◎◎◎	**Blinking** LEDs generally indicate the device is in the process of doing / attempting something. Blink duty cycle and blink period are generally selected to show urgency or ongoing progress through a series of steps. Example: Device is attempting to connect to the 802.11 access point.
Short time ●●●●	LEDs sometimes light for a **short time** to indicate some process has ended (success or failure) and the device is going to transition to another state soon. Example: Successful card read.

6.5   About Sounds

DynaProx products have a beeper that provides feedback to operators and cardholders about the internal state of the device:

- The device sounds one short beep after it has successfully read a contactless tap, and the cardholder can safely remove the card or device from the contactless landing zone.
- The device emits two beeps when reading a card or contactless payment device to indicate a card read error occurred.
- The device sounds two beeps when an operator cancels a pending EMV transaction.

The device provides an internal setting the host can use to adjust the global system volume. The device does not provide an interface to change the volume setting directly via buttons. If the device is too quiet or too loud:

- Make sure the device is being ordered from the manufacturer with the desired volume setting.
- Check to see whether the host software you are using provides a feature to check and/or adjust the volume setting.
- If the host software does not provide that feature, request help from the development team that built the host software to check / change the volume setting. For details, see *D998200489 DynaProx Programmer's Manual (COMMANDS)*.

6.5.1 How to Play a Sequence of Tones

To play a sequence of tones, follow these steps:
1) Make sure the device is in idle state.

2) Send an audio command to the device for playing a sequence of tones. For details, see *D998200489 DynaProx Programmer's Manual (COMMANDS)*.

6.6 Power Management

6.6.1 About Power

When properly powered through its USB port or RS-232 port, the device powers on automatically. For USB mode it will remain full powered mode to provide power to device. This device does not support USB suspend mode.

The minimum required current and voltage are very important to the proper operation of the DynaProx reader. During contactless card reading, the NFC field is activated and the required current will rise from less than 100 mA to less than 800 mA for typically around 1 second. If the momentary current draw causes the supplied voltage to drop below 4 VDC, the DynaProx reader may reset and fail to complete the card read.

Embedded systems and Single Board Computers (SBC) may find use in a wide range of card tending terminals. If the DynaProx will be supplied power through a USB port from one of these SBCs, it is important to be aware of the USB port current limitations, such as all USB ports may share a given amount of current, or the upstream current limitation of the system power supply.

An optional power/ground connection is available on the DynaProx RS-232 connector, even if the actual RS-232 signals are not in use.

6.6.2 How to Power On / Wake Up from Standby Mode / Power Off

To power on the device connect the device to USB power or RS-232 Power. Recommended 800 mA available current during transactions.

To power off the device, disconnect the device from USB power or RS-232 Power.

If all LEDs are off, the device is in Powered Off mode.

6.6.3 About Maintenance Reset

For full host control, the device should not be allowed to run for $>= 23$ hours without a reset. To accomplish this, have the host application send a reset command twice a day separated by at least one hour.

Example: Host software resets the device at 1 AM and 3AM. This keeps the device from initiating its own reset.

6.7 Card Reading

6.7.1 About Reading Cards

The steps for starting a transaction and reading a contactless payment device are different depending on the device's configuration and on the design of the host software. Host software developers should see section **8 Developing Custom Software** for implementation references. The solution developer should provide solution-specific instructions for operators to follow. A transaction generally follows this essential flow:

1) An advanced operator has already made sure DynaProx is configured properly and is connected to the host (see section **4.3 Connecting to a Host**). When the device is connected to the host via USB and powered by the USB-C connector or RS-232, the host software may always keep a connection open to the device.

2) The operator makes sure DynaProx is receiving power either from the USB connection or from the RS-232 connection, and is awake and powered on (see section **6.6.2 How to Power On / Wake Up** from Standby Mode / Power Off and section **6.4 About the Status LEDs**).

3) The operator uses the host software's user interface (for example, a point of sale) to finalize a transaction amount, then initiates a transaction. In solutions that are designed to respond to cardholder input events that occur when the device is idle, such as unprompted tapping of a card or electronic payment device, the host software may respond to those inputs by notifying the host, and the host software may trigger other operations without being initiated by an operator (for example, the host software may immediately start a transaction, or alert the cardholder or operator to take action).

4) The host communicates with the device, and reports to the operator when the device is ready.

5) The operator guides and assists the cardholder in presenting payment.

6) The cardholder interacts with the device to present payment. The following sections provide additional details about presenting each of the available payment methods.

7) The host monitors the progress of the transaction, and when necessary, should report issues to the operator, who may need to relay the messages to the cardholder.

8) The device reports the success or failure of the transaction to the cardholder and to the host.

6.7.2 How to Tap Contactless Cards / Devices

To tap a contactless card or smartphone, follow these steps:

1) Check LED status:
    a) The device shows the transaction status using the LEDs. LED1 lights solid and all other LEDs are off, per EMV standards, to indicate it is ready for a tap.
    b) All devices report detailed transaction status to the host, and host software may report that information to operators so they can guide cardholders through the transaction (for example, "please tap your card now").

2) If the cardholder is using an electronic payment device, such as a smartphone, make sure the payment device has **NFC** turned **On** and has a payment app configured to process transactions. For details, see the documentation provided by the smartphone manufacturer and payment app publisher.

3) Briefly hold the card, smartphone, or other contactless payment device over the contactless landing zone, indicated by the EMVCo Contactless Indicator symbol on the device's face (see **Figure 6-19**). Because each smartphone model may have its NFC antenna placed differently, the ideal tap position may vary by make and model. For example, Samsung users may need to center the phone on the contactless landing zone, while Apple users may need to tap the top of the phone on the contactless landing zone.

4) Wait for LED status:
    a) The device quickly lights the second LED to show it is processing, then lights the third LED to show it has successfully read the tap, then lights the fourth LED to show the read is complete (see **Figure 6-20**).
    b) The device beeps once.
    c) If the transaction requires a signature, the device sends a notification message to the host that includes the status **Signature Capture Requested**. In this case, the solution design collects the cardholder's signature via a different method.
    d) The device ends the transaction and reports the transaction status to the host.

5) If the device cannot communicate with the card, smartphone, or other contactless payment device:
    a) The device ends the transaction.
    b) The device lights LED4 for a short time.
    c) The device beeps twice.
    d) The device notifies the host that the transaction failed. If this occurs, the host software may choose to retry the transaction or revert to prompting the operator to perform another operation that is specific to the solution design.

Figure 6-19 - Tapping a Contactless Card / Smartphone
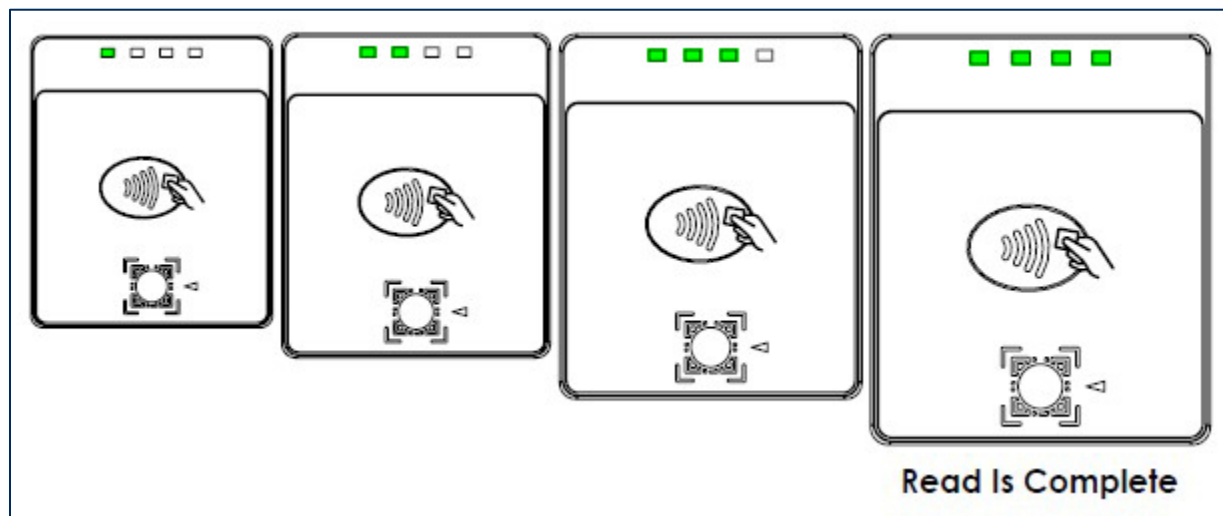
Figure 6-20 – Contactless Read LED Sequence

6.7.3 How to Scan Barcodes

To scan a barcode, follow these steps:

1) Make sure you are using a DynaProx model that includes a barcode reader, indicated by QR code markings on the face of the device surrounding the barcode reader lens (see section **1.4 About DynaProx Components**).

2) If the barcode being scanned is not on a self-illuminated source such as a smartphone, make sure there is enough ambient light for the camera to read the barcode. In low light conditions, the barcode reader will only be able to read self-illuminated sources.

3) In some solutions, the operator may have to perform an operation in the host software to enable the barcode reader, or to start a transaction with the barcode reader enabled.

4) Wait for the device, the host, or the operator to prompt for a barcode read:

    a) The device lights the barcode reader indicator LED next to the barcode reader lens.

5) Hold the barcode in front of the barcode reader camera:

    a) If possible, use the light from the barcode reader indicator LED to align the barcode within the barcode reader's field of view, which extends 16 degrees above / below and 21 degrees to the left / right of a line perpendicular to the barcode reader lens.

    b) Hold the barcode as close as 1 inch from the lens. For smaller barcodes, the device will read immediately. If it does not, gradually move away up to 14 inches from the lens until the device reports a successful read. Larger barcodes must be far enough away from the device that the whole barcode is within the camera's field of view; if a large barcode is too close, the barcode reader can only see a zoomed in portion of the barcode.

    c) Do not tilt the barcode more than 60 degrees from parallel to the device's face.

6) Wait for the device or the host to report the barcode has been read successfully:

    a) The device beeps once.

    b) The device turns off the barcode reader indicator LED.

Figure 6-21 - Scanning a Barcode

6.7.4 Apple VAS for DynaProx

DynaProx products support Apple Value Added Services (Apple VAS) protocol.
Contactless transactions using the Apple VAS protocol permits the device reader to perform the following supported operations:

6.7.4.1 VAS App and Payment Mode (Dual Mode)
The device reads both Apple VAS data and EMV payment data from a tapped smartphone or reads EMV payment data from a tapped card. When device sends ARQC to the host to conclude the transaction, it includes EMV payment data in container FC and includes VAS data, if available, in container FE

6.7.4.2 VAS App Only Mode (VAS Mode)
The device reads only Apple VAS data from a tapped smartphone and does not read data from a tapped card. If the tapped smartphone does not support VAS, the device does not detect or read from the smartphone. When the device send ARQC to conclude the transaction, it includes VAS data in container FE and does not include EMV payment data in container FC.

6.7.4.3 VAS App or Payment Mode (Single Mode)
The device reads only Apple VAS data from a tapped smartphone or reads EMV payment data from a tapped card. When the device sends ARQC to conclude the transaction, it only includes either EMV payment data in container FC for cards, or includes VAS data in container for smartphones.

6.7.4.4 Payment Only Mode (Payment Mode)
The device operates the same as EMV mode (01). It reads only EMV payment data from a tapped smartphone or a tapped card. When the device sends ARQC to conclude the transaction, it includes EMV payment data in container FC and does not include VAS data in container FE.
For details, see ***D998200489 DynaProx Programmer's Manual (COMMANDS).***

6.7.5   How to Tap Contactless NFC Tags / MIFARE Classic / MIFARE DESFire /MIFARE Plus Cards and Send Pass-through Commands
DynaProx is compatible with near field communication (NFC) technology such as MIFARE Classic / MIFARE DESFire /MIFARE Plus contactless IC products (smart cards).

To tap an NFC Contactless IC Product and Send Pass-through commands, follow these steps:
1) Check LED status:
    a) Per EMV standards, the device indicates transaction status through its LED indicators, located on the front face of the device. When ready for a tap, LED 1 shines steadily while all other LEDs remain unlit.
    b) All devices communicate transaction details to the host. The host software will relay this information to operators, allowing them to direct cardholders during the transaction, such as prompting "please tap your card now".
2) Place the card over the device's designated contactless landing zone, marked by the EMVCo Contactless Indicator symbol on the front face of the device.
3) Wait for LED status:
    a) Initially, LED 2 illuminates, signaling the device is processing. The device subsequently illuminates LED 3 and LED 4, indicating card detection. Notifications are then sent to identify the card type and UID.
    b) The Host application can further interact with the NFC Tag using pass-through commands. For details, see ***D998200489 DynaProx Programmer's Manual (COMMANDS).***
    c) If the pass-through command is the last successful command, the device will end the transaction, emitting a single beep signaling a successful transaction. The user then needs to remove the card.
    d) If an error is detected, the device will end the transaction and emit two beeps to signal the error. The user then needs to remove the card.
4) The device notifies the host that the transaction has ended with the NFC Tag removed.

7   Maintenance

7.1   Mechanical Maintenance

⚠ CAUTION
DO NOT use liquid cleaning products or insert any other objects into the device. **DO NOT apply any liquid directly onto the device, to avoid seepage into the electronics.**

Periodic cleaning of the device's exterior may be required. To clean the outside of DynaProx products, wipe down the device with a soft, slightly damp cloth and then wipe dry with a lint-free cloth. The glass on the face can also be cleaned using a slightly damp specialty cleaning cloth, like those used to wipe lenses, monitors, and smartphone displays.

7.2   Updates to Firmware, Documentation, Security Guidance

In addition to the security guidance in the product manuals, MagTek may provide updates to this document, as well as supplemental security guidance or notices regarding vulnerabilities, at www.magtek.com. MagTek advises checking the product's home page periodically for the most up-to-date information.

Any firmware updates addressing product features, bugs, or security vulnerabilities are also posted to www.magtek.com or may be sent directly to affected customers. To update the device's firmware:

1) Obtain the firmware image to install from your MagTek representative.

2) Download *1000007406 DynaFlex, DynaFlex II, DynaProx Utility* from the MagTek web site.

3) Follow the instructions in *D998200402 DynaFlex, DynaProx Firmware Update Utility Manual* included in the firmware update utility's **Docs** subfolder.

8   Developing Custom Software

Custom host software uses the same underlying device command set for all DynaProx product connection types. This section provides high-level information about communicating with the device via the various physical connection types in various software development frameworks, and provides pointers to available SDKs, which include sample code. Product documentation and SDKs are available for download by searching for the product name on www.magtek.com and navigating to the **Support** tab.

MagTek provides convenient SDKs and corresponding documentation for many programming languages and operating systems. The API libraries included in the SDKs wrap the details of the connection in an interface that conceptually parallels the device's internal operation, freeing software developers to focus on the business logic, without having to deal with the complexities of platform APIs for connecting to the various available connection types, communicating using the various available protocols, and parsing the various available data formats. Information about using MagTek wrapper APIs is available in separate documentation, including:

- *D998200380 MagTek Universal SDK Programmer's Manual (Microsoft .NET)*
- *D998200381 MagTek Universal SDK Programmer's Manual (Microsoft C++)*
- *D998200385 MagTek Universal SDK for MMS Devices Programmer's Manual (Java)*
- *D998200387 MagTek Universal SDK Programmer's Manual (Android)*

The documentation is bundled with the SDKs themselves, which include:

- *1000007351 MagTek Universal SDK for MMS Devices (Windows)*
- *1000007352 MagTek Universal SDK for MMS Devices (Android)*

The SDKs and corresponding documentation include:

- Functions for sending the direct commands described in this manual
- Wrappers for commonly used commands that further simplify development
- Sample source code to demonstrate how to communicate with the device using the direct commands described in this manual

To download the SDKs and documentation, search www.magtek.com for "SDK" and select the SDK and documentation for the programming languages and platforms you need or contact MagTek Support Services for assistance.

In addition to the SDK API libraries, software developers also have the option to revert to direct communication with the device using libraries using the operating system's native USB and serial port libraries. For example, custom software written in Visual Basic or Visual C++ may make API calls to the standard Windows USB HID driver. For more information about sending commands directly, see *D998200489 DynaFlex / DynaProx Programmer's Manual (COMMANDS).*

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

Appendix A   Technical Specifications

DynaProx Products Technical Specifications
Reference Standards and Certifications
EMV Contactless Level 1 Version 3.0 MasterCard TQM MCL v3.1.3, payWave v2.2, Expresspay 4.0.2, D-PAS Terminal Payment Application v1.0, D-PAS Terminal Application Specification Bulletins CL TAS-002 v1.1, CL TAS-003 v1.0, CL TAS-004 v1.0 PCI PTS POI v6.1 SCR TDEA (3DES)-CBC using DUKPT FCC Part 15 Low Power Transceiver, RX verified per FCC Title 47 Part 15 Subclass C UL/CSA/IEC 62368-1, 2nd edition CE Certified CE Safety: IEC 62368-1: 2014 Canada ISED Certified AS/NZS CISPR 32 (2013), AS/NZS 4268 Table 1, Row 59 DTS 2400-2483MHz SRD (802.11), and AS/NZS 4268 (2017) Table 1, Row 43 13.553-13.567MHz (contactless reader) RoHS Compliant the Electrical and Electronic Equipment (EEE) Reduction of Hazardous Substances (RoHS) European Directive 2002/95/EC California Proposition 65 (California) IPC-A-610 Class II Assembly EU Directive Waste Electrical and Electronic Equipment (WEEE) EU Directive Restriction of Hazardous Substances (RoHS) Universal Serial Bus Specifications 1.1, 2.0 AES, SHA-256

Physical Characteristics	
Dimensions (L x W x H):	2.09 in. x 2.52 in. x .72 in. (53mm x 64mm x18.5mm)
Weight	DynaProx = 2.0 oz. (56g) DynaProx BCR = 2.0 oz. (58g)
Supported Mounting Options:	Mounting Screw Holes Optional Stand

Card Read Characteristics	
Magnetic Stripe Reader:	Not Applicable
EMV Contact Reader:	Not Applicable
EMV Contactless Reader:	EMVCo L1 and L2 Contactless Reader D-PAS, PayPass/MCL, payWave, Expresspay Mobile wallets including but not limited to Apple Pay, Google Pay, Samsung Pay

DynaProx Products Technical Specifications	
Barcode Reader:	Barcode Media: Labels, paper, smartphone / computer displays Barcode Types: QR Codes, Linear Barcodes, UPC-A, UPC-E, Code 128, PDF417 / Data Matrix, Aztec, etc. Field Of View 31.5° total vertical sweep, 42° total horizontal sweep, perpendicular to device face Depth Of Field 1.2 in. (30mm) to 13.8 in. (350mm) Integrated white indicator LED
User Interface Characteristics	
Status Indicators:	4 Monochrome Green LEDs
Display Type:	Not Applicable
Keypad:	Not Applicable
Security Characteristics	
Certifications:	PCI PTS POI v6.1 Certified Secure Card Reader (SCR)
Tamper Protection:	The enclosure and associated electronics form a Tamper Resistant Security Module (TRSM) where attempts to penetrate or modify the unit cause all cryptographic keys to be cleared or rendered unusable.
Electrical Characteristics	
Power Inputs:	USB powered via USB-C receptacle RS-232 powered via RS-232 custom receptacle
Power Outputs:	None
Rechargeable Battery Type:	None
Voltage Requirements:	5 VDC
Current Requirements:	800 mA recommended. Note: Avoid poor quality cables, or cables longer than 12ft in length, as they can lead to unexpected reader behavior. Refer to **Table 1-2 - DynaProx Accessories** for cable options.
Data Storage:	Not Applicable
Communication Characteristics	
Wired Connection Types:	USB-C, compatible with USB 1.1, USB 2.0, USB 3.0 Vendor-defined USB Human Interface Device (HID) data format RS-232 Interface
Wireless Connection Types:	None
RF Exposure:	Exempt from SAR requirements due to radiated power substantially below regulatory thresholds.

DynaProx Products Technical Specifications	
Software Characteristics	
Tested Operating System(s):	USB Hosts: Windows 10, Android 4.4.2 and above
Environmental Resistance	
Ingress Protection:	IP66
Operating Temperature:	DynaProx: -22°F to 185°F (-30°C to 85°C) – DynaProx BCR: -4F to 131°F (-20°C to 55°C)
Operating Relative Humidity:	Up to 90% non-condensing
Storage Temperature:	DynaProx: -30°C to 85°C (-22°F to 185°F) – DynaProx BCR: -30°C to 70°C (-22°F to 158°F)
Storage Relative Humidity:	Up to 90% non-condensing
Vibration Resistance:	5Hz to 50Hz sinusoidal vibrations for 10 minutes at 1g acceleration on each of XYZ axes
Shock Resistance:	IK08
ESD Tolerance (EMVCo):	Not Applicable
ESD Tolerance (FCC/CE):	±8kV contact discharge / ±16kV air discharge when properly grounded
Vapor Resistance:	Test Gasoline-96 RON (Reference Gasoline); Reference Fuel C; Diesel 2007 Emission Certification Fuel (Reference Diesel); E10; E25; E85; M15; Road-Use Diesel; Road Use Unleaded
Reliability	
Shelf Life:	60 months at 25°C nominal
Magnetic Read Head Life:	Not Applicable
ICC Read Head Life:	Not Applicable
Battery Shelf Life:	5 years or longer (backup battery)
Battery Cycle Life:	NA

Appendix B   Barcode Reader Symbologies

A Barcode symbology refers to the way in which data is encoded in a barcode. It uses either spaced lines, dots or squares. When read, these symbols are decoded and converted to data. The table below lists all of the supported symbologies and which are enabled by default.

Table 8-1 - Barcode Reader Supported Symbologies

Symbology	Default
AIM 128	Disabled
Aztec	Enabled
Codabar	Enabled
Code 11	Disabled
Code128	Enabled
Code 32	Disabled
Code 39	Enabled
Code 93	Disabled
Data Matrix	Enabled
EAN-8	Enabled
EAN-13	Enabled
Febraban	Disabled
GSI-128 (UCC/EAN-128)	Enabled
GS1 Databar (RSS)	Disabled
Industrial 25	Disable
Interleaved 2 of 5,	Enabled
ISSN	Disabled
ISBN	Disabled
ITF-14	Disabled
ITF-6	Disabled
Matrix 2 of 5	Enabled
Micro QR	Disabled
MSI Plessey	Disabled
PDF417	Enabled
Plessey	Disabled
QR Code	Enabled
Standard 25	Disabled
UPC-E	Enabled
UPC-A	Enabled

Appendix C   Warranty, Standards, and Certifications

LIMITED WARRANTY

MagTek warrants that the products sold pursuant to this Agreement will perform in accordance with MagTek's published specifications. This warranty shall be provided only for a period of one year from the date of the shipment of the product from MagTek (the "Warranty Period"). This warranty shall apply only to the "Buyer" (the original purchaser, unless that entity resells the product as authorized by MagTek, in which event this warranty shall apply only to the first repurchaser).

During the Warranty Period, should this product fail to conform to MagTek's specifications, MagTek will, at its option, repair or replace this product at no additional charge except as set forth below. Repair parts and replacement products will be furnished on an exchange basis and will be either reconditioned or new. All replaced parts and products become the property of MagTek. This limited warranty does not include service to repair damage to the product resulting from accident, disaster, unreasonable use, misuse, abuse, negligence, or modification of the product not authorized by MagTek. MagTek reserves the right to examine the alleged defective goods to determine whether the warranty is applicable.

Without limiting the generality of the foregoing, MagTek specifically disclaims any liability or warranty for goods resold in other than MagTek's original packages, and for goods modified, altered, or treated without authorization by MagTek.

Service may be obtained by delivering the product during the warranty period to MagTek (1710 Apollo Court, Seal Beach, CA 90740). If this product is delivered by mail or by an equivalent shipping carrier, the customer agrees to insure the product or assume the risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or equivalent. MagTek will return the product, prepaid, via a three (3) day shipping service. A Return Material Authorization ("RMA") number must accompany all returns. Buyers may obtain an RMA number by contacting MagTek Support Services at (562) 546-6800.

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FCC INFORMATION

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

Note: 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by MagTek could void the user's authority to operate this equipment.

CANADIAN DECLARATION OF CONFORMITY

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.

INDUSTRY CANADA (IC) RSS

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) L'appareil ne doit pas produire de brouillage, et (2) L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

CUR/UR

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

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.

EU STATEMENT

Hereby, MagTek Inc. declares that the radio equipment types **Wideband Transmission System** (802.11 wireless and Bluetooth Low Energy), and **Non-Specific Short Range Device** (contactless) are in compliance with ***Directive 2014/53/EU***. The full text of the EU declarations of conformity is available at the following internet addresses:

- https://www.magtek.com/Content/DocumentationFiles/D998200238.pdf.
- https://www.magtek.com/Content/DocumentationFiles/D998200296.pdf

AUSTRALIA / NEW ZEALAND STATEMENT

Testing for compliance with AS/NZS standards was performed by a registered and accredited laboratory. The unit under test was found compliant with standards established under AS/NZS CISPR 32 (2013), AS/NZS 4268 Table 1, Row 59 DTS 2400-2483MHz SRD (802.11), and AS/NZS 4268 (2017) Table 1, Row 43 13.553-13.567MHz (contactless reader).

UL/CSA

This product is recognized per ***UL 60950-1, 2nd Edition, 2011-12-19*** (Information Technology Equipment - Safety - Part 1: General Requirements), ***CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12*** (Information Technology Equipment - Safety - Part 1: General Requirements).

ROHS STATEMENT

When ordered as RoHS compliant, this product meets the Electrical and Electronic Equipment (EEE) Reduction of Hazardous Substances (RoHS) Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU. The marking is clearly recognizable, either as written words like "Pb-free," "lead-free," or as another clear symbol ($\oslash$).

PCI STATEMENT

PCI Security Standards Council, LLC ("PCI SSC") has approved this PIN Transaction Security Device to be in compliance with PCI SSC's PIN Security Requirements.

When granted, PCI SSC approval is provided by PCI SSC to ensure certain security and operational characteristics important to the achievement of PCI SSC's goals, but PCI SSC approval does not under any circumstances include any endorsement or warranty regarding the functionality, quality or performance of any particular product or service. PCI SSC does not warrant any products or services provided by third parties. PCI SSC approval does not under any circumstances include or imply any product warranties from PCI SSC, including, without limitation, any implied warranties of merchantability, fitness for purpose, or non-infringement, all of which are expressly disclaimed by PCI SSC. All rights and remedies regarding products and services which have received PCI SSC approval shall be provided by the party providing such products or services, and not by PCI SSC.

SAFETY

This product has been evaluated by multiple safety certification agencies, including Underwriters Laboratories (UL) and the United States Federal Communications Commission (FCC Class A and Class B), and is designed to protect both the user and the device. This document is written specifically to work in conjunction with these safety and integrity features to protect the user and the device. It is very important to follow all steps in the product documentation carefully, in the order in which they are described, and at the recommended times. Failure to do so could result in personal injury, and / or cause damage to the device, and / or void the product warranty.

SAFETY REQUIREMENTS

⚠ CAUTION

Never do any of the following:

- DO NOT use a ground adapter plug to connect equipment to a power socket-outlet that lacks a ground connection terminal.
- DO NOT attempt any maintenance function that is not specifically described in this manual or in other ExpressCard 3000 instructional documents published by MagTek.
- DO NOT remove any of the covers or guards that are fastened with screws. There are no user-serviceable areas within these covers.
- DO NOT override or "cheat" electrical or mechanical interlock devices.
- DO NOT use EC3000 supplies or cleaning materials for other than their intended purposes.
- DO NOT operate the equipment if you or anyone else have noticed unusual noises or odors.

Consider the following before operating the ExpressCard 3000:

- Connect the EC3000 to a properly grounded AC power socket-outlet. If in doubt, have the socket-outlet checked by a qualified electrician. Improper connection of the device's grounding conductor creates a risk of electric shock.
- Place the EC3000 on a solid surface that can safely support the device's weight plus the weight of a person leaning against it (such as a service technician).
- Be careful when moving or relocating the device. Use proper lifting techniques.
- Use materials and supplies specifically designed for MagTek devices. Using unsuitable materials may result in poor performance, and in some cases may be hazardous.

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