

Specifications

Dimensions

3 3/4" (W) x 7 13/16" (L) x 1 5/8" (D) / 95.3 mm x 198.4 mm x 41.4 mm

Max Load Current

<500 mA

Battery

Rechargeable battery pack NiMH

Cables

DB9 Serial Connection, USB Port v2.0 – Mini-B Connector

Environmental

Operating Temperature Range: 0 to 50 °C

Storage Temperature Range: -20 to 50 °C

Relative Humidity Range: 0 to 95% non-condensing

dormakaba USA Inc.

6161 East 75th St., Indianapolis, IN 46250

T: 1-800-849-8324 (ext. 1)

www.dormakaba.com

Technical Support

T: 1-800-849-8324 (ext. 2)

Gen 2 - M-Unit User Guide – KD10093-E-0325

Gen 2 - M-Unit User Guide

Introduction

The M-Unit (mobile unit) is a hand-held diagnostic and site survey tool designed to support users of the E7900 locks. This device performs several functions such as firmware update, site survey and diagnostics.

Kit

You have purchased the M-Unit kit (MUNIT-52-114), which includes:

- M-Unit
- Mini USB Charging Cable
- Programming Unit Adaptor for E-Plex 7900-series locks
- AC Adaptor
- Carry Case



Menu Settings

Door	Diagnostic	Diagnoses an E-Plex lock.
	Firmware	Updates a lock with a newer version of firmware.
Wireless	Ping Network	Accesses open ZigBee network(s) to check signal strength.
	Scan Network	Views all available ZigBee network(s).
Tools	User Interface	Allows the user to change the power settings, language, volume and screen contrast.
	Change Time	Allows the user to change the time, date and DST.
	About	Displays technical information about the M-Unit itself, including firmware and calibration #.
	New Password	Allows the user to change the password.

NOTE: This M-Unit supports E7900 Generation 2. It is compatible with E792xxx locks and GWD* or GWW* gateways

M-Unit Setup

Prior to first use, ensure that the handheld M-Unit has a sufficient charge. If not, plug the M-Unit into a power source via the included USB to USB Mini-B cable or the AC adaptor. The battery icon on the top right of the M-Unit screen represents battery power.

Turn on the handheld M-Unit by pressing the power button on the bottom-left of the number pad. A booting screen will appear, and the unit will beep. After booting, the user will need to enter a password. The default password out of the box is 000. dormakaba Canada Inc. strongly recommends changing the password immediately to increase security of the device. See the New Password section in this document for further information.

To insert a password, use the number pad, then press the ENTER button. Once a valid password is entered, three menus will appear: Door, Wireless and Tools.

Tools

This section lists and describes how to use each Tool within the M-Unit interface.

User Interface

The User Interface menu allows the user to tailor how they interact with the device. Choose between the following options by pressing the number associated on the number pad (or, scroll through the list with the up and down arrow buttons and select with the ENTER button):

- 1) Power Settings – Change the Backlight Timeout by scrolling through the list with the up and down arrow buttons and select with the ENTER button. These increments outline when/if the backlight turns off. Repeat the previous steps for the Power Off Timeout. This option outlines when/if the device powers off during inactivity.
- 2) Language – Select between English and French by either choosing the corresponding number on the number pad or by scrolling through the options with the up and down arrow buttons and selecting with the ENTER button.
- 3) Volume – Select between Mute, Low or High to adjust the beep volume of the device by either selecting the corresponding number on the number pad or by scrolling through the options with the up and down arrow buttons and selecting with the ENTER button.
- 4) Contrast – Use the up and down arrow buttons to increase or decrease the level of contrast set on the display. Select either Save to confirm the contrast or Cancel to return to the previous screen without saving.

Change Time

This menu allows the user to change the time, date and Daylight Savings Time (DST). Press the up and down arrow buttons to scroll through the options for each field. Press the ENTER button to confirm and move on to the next field. To cancel, go back to the previous field or to save the selection, select the corresponding arrow button (located below the display screen).

About

This screen displays information, such as the Firmware version of the device. To exit this screen, press the home button located on the bottom-right of the number pad.

e) Lock Function – Displays the lock function between Entry, Residence and Privacy

f) BLE Version – Shows if the lock is BLE-enabled

g) Lock Date – Displays the current date and time of the lock pulled from the M-Unit when the door is programmed

8. Select OK by pressing the right-most arrow button below the screen and return to the main menu.

Firmware Update

The M-Unit can deliver a firmware update file from the PC running the software client to the E-Plex lock. Follow these steps to deliver a firmware update to an E-Plex lock:

- 1) First, ensure the firmware file (.ENC2 for 7900 locks) is currently within the M-Unit root directory. For information on how to navigate to the root folder, review the M-Unit Data File section earlier in this document.
- 2) From the M-Unit Main Menu, select Doors, then select 4 on the number pad or navigate to the Firmware option with the arrow buttons and press the ENTER button.
- 3) If updating a 7900 lock, select 7900.
- 4) In the File Choice screen, scroll to the applicable file and press the ENTER button.
- 5) If the lock is currently in Factory Mode, select YES. Select NO if the lock is in Full Feature Mode. If in Full Feature Mode, the 8-digit Customer ID is located under Settings – E-Plex Settings within LUNA, and under Site Information Setup where your lock and Door Group was saved within Aurora.
- 6) Follow the appropriate procedure to set the lock into Communication Mode based on your lock type and state (Factory or Full Feature).
- 7) Sending Firmware appears on screen. Once complete, Lock FW upgrade success! is displayed. Select OK to return to the Main Menu.

Communications Mode

To program an E-Plex lock, the lock must first be put into Communications Mode. Depending on the series of E-Plex lock being used, the process will differ of how to put it into Communications Mode. Select a method below depending on your lock type:

Note: Putting a lock into Communication Mode only provides a 30-second window in which to communicate with the M-Unit for programming.

- E-Plex 7900 locks:
 1. If the lock is in Factory Mode: Present the Factory Communication command card to the door reader to initiate Communications Mode. The door lock can now communicate with the M-Unit.
 2. If the lock is in Full Feature Mode: A user with Master or Manager privilege can present the Communication card followed by their User Access card to the door lock reader. An M-Unit credential can also establish communication. The door lock can now communicate with the M-Unit.

Diagnosing an E-Plex Lock

The M-Unit can diagnose E-Plex locks. Depending on the series of E-Plex locks being diagnosed, the process will differ. Select a method below depending on your lock type:

Note: Only E7900 E-Plex locks can be diagnosed with the M-Unit.

- E-Plex 7900 locks:
 1. From the main screen, select Door by pressing the left-most arrow button below the screen.
 2. Choose Diagnostic by either selecting the corresponding number on the number pad or by scrolling through the options with the up and down arrows and selecting with the ENTER button.
 3. Choose 79xx Series by either selecting the corresponding number on the number pad or by scrolling through the options with the up and down arrows and selecting with the ENTER button.
 4. The screen will display Put Lock into Communications Mode. Review the Communications Mode section in this document.
 5. Attach the Programming Unit Adaptor onto the lock and attach the other end into the serial port of the M-Unit.
 6. Select OK by pressing the right-most arrow button below the screen. Initializing Comms is displayed on screen while the M-Unit diagnoses the lock.
 7. Upon completion, the following information is displayed:
 - a) Lock Model – Displays the E-Plex lock model
 - b) Firmware Version – Shows the current firmware version of the lock
 - c) Battery Voltage – Displays the lock’s battery voltage
 - d) HW Voltage – Shows the lock’s hardware voltage

New Password

The default password out of the box is 000. It is strongly recommended that you change the password immediately to increase security of the device. While using the number pad, enter a new password using numbers and/or letters (press the corresponding button multiple times for each desired character). The password must contain at least 8 characters. You can return to the previous character by selecting the Backspace option (press the corresponding arrow button below the screen). Once the password is filled, press the ENTER button to save. Password Saved is displayed on screen.

Note: If the password is inputted incorrectly 5 times in a row, the device will prompt the user to reset the password to the default value, which then deletes all stored data files and restores factory settings.

Site Survey

Site Survey is required when setting up wireless E-Plex Locks to determine the best setup.

Prior to installing a lock, the signal strength of a ZigBee network must be identified to best measure where to place a Gateway. Read through the following headings to properly perform a Site Survey.

Survey Guidelines

Observe the following guidelines prior to performing a Site Survey:

- Floor plans need to be prepared and this step requires the planner to:
 - Identify all online lock locations
 - Decide on redundancy options: no redundancy or path redundancy
 - Validate power source availability for Gateways and Routers (adapter or PoE)
 - Decide on Gateway communication: Ethernet (TCP/IP Network)
- For new construction properties, perform the Site Survey when the building is as close to finished as possible, which will avoid inaccurate results
- No Gateway or Router should exceed 25 locks within its RF range
- When performing a Site Survey, position the Test Gateway in the orientation that the final Gateway or Router will be installed (e.g. horizontally in a drop ceiling, vertically mounted to a wall, etc.). Position it horizontally (label facing upwards) to maximize range
- Humid climate conditions, waterfalls/fountains can block and/or weaken ZigBee communication
- Do not place the Gateway near elevators, stairwells, steel doors, or other large metal structures
- When testing signal strength at the door, first check signal strength on both sides of the door to determine antenna choice (inside or outside mount). Second, check the signal strength with the door open and closed
- Do not place a Gateway in a closet or any other area where there is ductwork, electrical panels, other large metallic equipment, steel doors, etc.
- The ZigBee signal does not bend around corners constructed of concrete and/or metal framing. You may need to place a Gateway on each side of a corner

- If the Gateway is to be installed inside a room, then perform the Site Survey with the room's entry door closed
- If you are placing the Gateway inside of an existing access panel, ensure that the panel is closed and the Gateway is in the correct position before testing
- If the property has or will be installing Wi-Fi access points, ask for a markup of the locations. When placing the Gateway for survey, keep Gateway and Wi-Fi access points at a minimum of 6 feet apart

Gateway Configuration - Join On Mode

Before performing a Site Survey, the E-Plex gateway (sold separately) must first be put into Manual Join On Mode. To put an E-Plex gateway into Manual Join On Mode, simply press the reset button on the side of the gateway 3 times within 3 seconds.

Note: Join On Mode lasts 10 minutes.

Scan Network

The M-Unit can scan the surrounding area to determine available ZigBee network(s). Follow these steps to scan for ZigBee network(s):

- 1) From the main screen, select Wireless by pressing the middle arrow button below the screen.
- 2) Choose Scan Network by either selecting the corresponding number on the number pad or by scrolling through the options with the up and down arrow buttons and selecting with the ENTER button.
- 3) Select Scan by pressing the middle arrow button below the screen. After a few seconds, the M-Unit will display all available ZigBee network(s).
- 4) Scroll through the different networks by selecting either Prev or Next with the left-most and middle arrow buttons below the screen. Any network displayed with an Allowing Join value of 1 will be used to ping a network.

Note: Scanning ZigBee network(s) only provides static information and cannot be altered from this screen.

- 5) Select Done by pressing the right-most arrow button below the screen. Return to the main menu by pressing the Home button twice on the bottom-right of the number pad.

Ping Network

To determine correct lock placement in comparison to Gateway location, the M-Unit can ping a ZigBee network to determine signal strength from the Gateway. Follow these steps to ping a ZigBee network:

- 1) From the main screen, select Wireless by pressing the middle arrow button below the screen.
- 2) Choose Ping Network by either selecting the corresponding number on the number pad or by scrolling through the options with the up and down arrow buttons and selecting with the ENTER button.
- 3) Select Ping by pressing the left-most arrow button below the screen. After a few seconds, the M-Unit will identify the closest ZigBee network. If the M-Unit fails to find a ZigBee network, try the test again by pressing the left-most arrow button below the screen to select Ping. If multiple attempts fail, troubleshoot the Gateway hosting the ZigBee service.
- 4) A bar will illuminate on screen identifying the ZigBee signal strength as either Very Good, Good or Unacceptable. View the illustration below for varying signal strength indicators. It is recommended to stay within the Green range to limit service interruptions to the lock. If the range is within the Red area, either move the Gateway closer to the lock, or add an additional Gateway to extend the range. Once an acceptable range is decided, install the E-Plex lock at the desired location.

