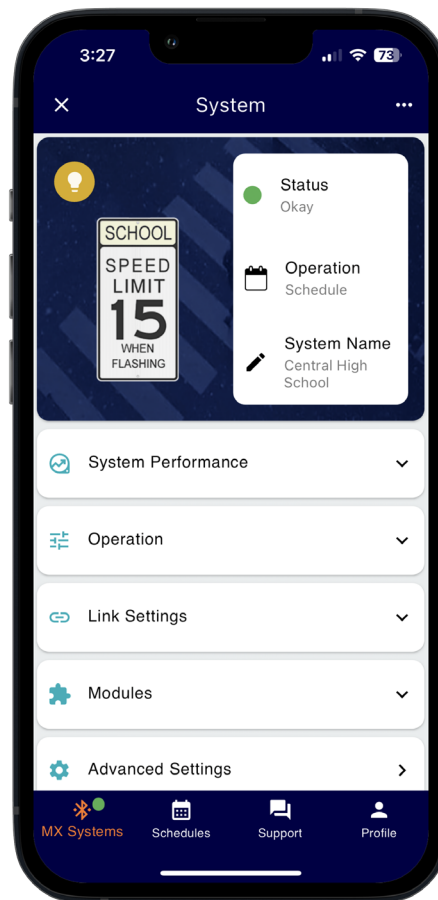
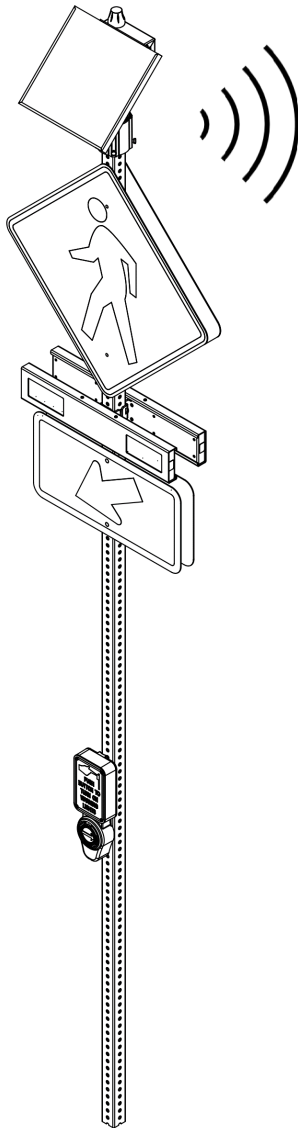




carmanah®  
MX Series

# MX Field App™ USER GUIDE



91752REVE

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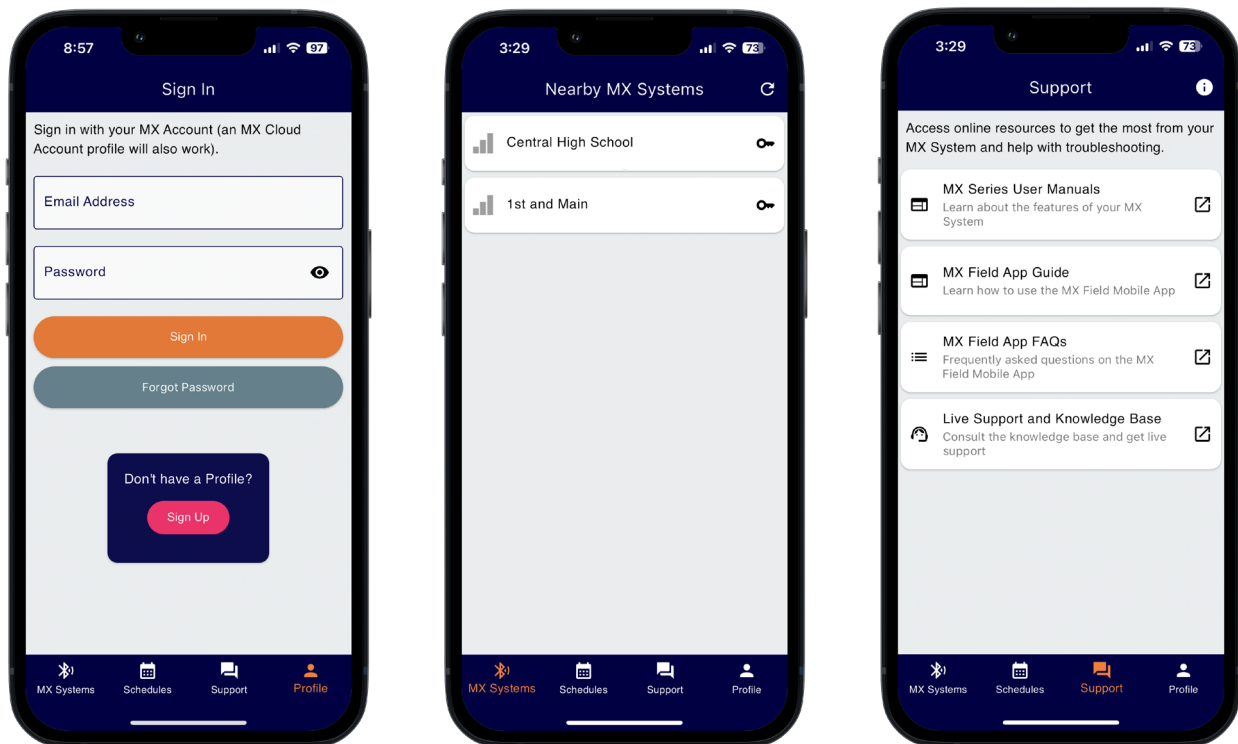
# 1.0 Introduction

## 1.1 About the App

The MX Field App wirelessly communicates with MX systems for programming, configuration and diagnostics. It utilizes the Bluetooth® connection between your mobile device and the MX system. Once you download the app, a cellular or Wi-Fi connection is required to create and sign into your Profile.

The MX Field App allows for system programming, scheduling, firmware updates and diagnostics from the ground without having to manually access the system.

The MX Field App is available free of charge on the Apple App Store and Google Play Store for compatible mobile devices.



**NOTE** To download the MX Series user/install manuals, please visit [carmanah.com/mxdocs](https://carmanah.com/mxdocs).

**NOTE** The images and descriptions in this document feature the iOS version of the app. The iPadOS and Android versions will be very similar.

**NOTE** All MX systems come embedded with a cellular radio for remote connectivity. For more information on MX Cloud, see [support.carmanah.com](https://support.carmanah.com).



## 1.2 App Installation

Download and install MX Field App from the Apple App Store or Google Play Store:



The following are the minimum device requirements to download and use the app:

iPhone (iOS®) Requirements	iPad (iPadOS®) Requirements	Android Requirements
iOS version 13 or newer	iPadOS 13 or newer	Android 9 or newer

**NOTE**

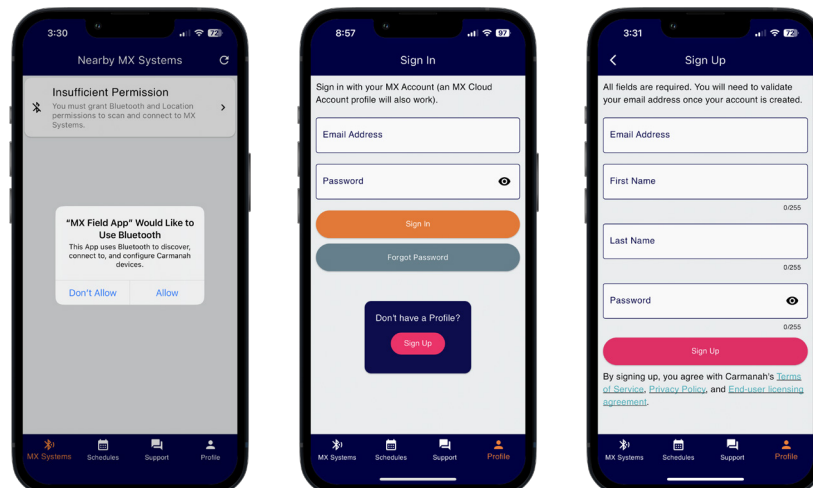
Mobile devices require Bluetooth Low Energy (BLE). Older hardware and/or software than listed above may be compatible but are not officially supported or tested by Carmanah.

## 2.0 Initial Setup

### 2.1 Self-Serve Profile Creation and Signing In

Upon opening the app you will be required to create a Profile. A valid email is required to verify this process.

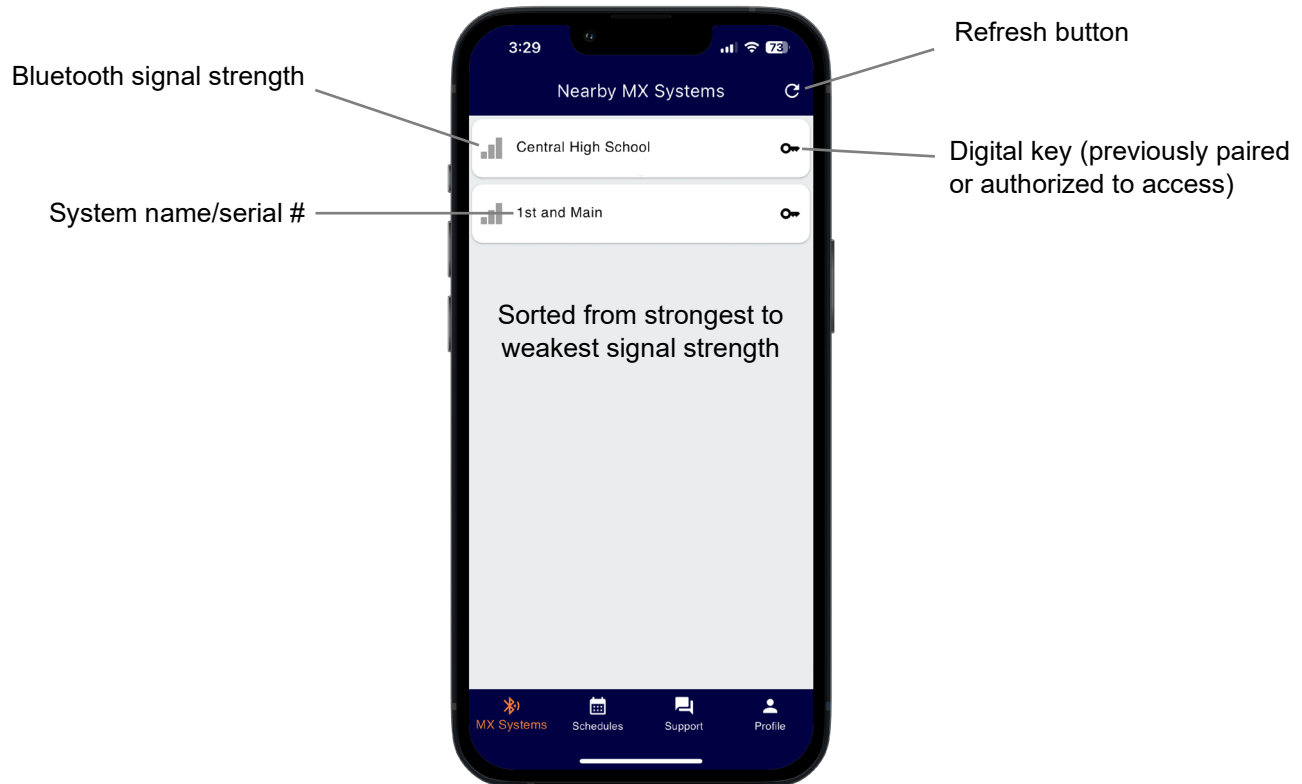
1. Tap on Allow to give permission to the app to access your phone's Bluetooth connection. If this is not done you will not be able to scan and connect to MX systems.
2. Tap on Sign Up.
3. Fill out all fields in the form and tap Sign Up.
4. Upon successful creation tap on OK.
5. Check your email to validate your Profile.
6. Return to the app. Enter your email address and password. Tap Sign In.



## 2.2 Pairing to the MX Series System

Once signed in, the app will take you to the Nearby MX Systems screen. On this screen, the app will automatically scan and detect any nearby MX systems (up to approximately 100' or 30 m away). To scan manually, tap the “refresh” button (🔄) in the top right or swipe down on the screen.

For best performance, stand near the system when pairing.

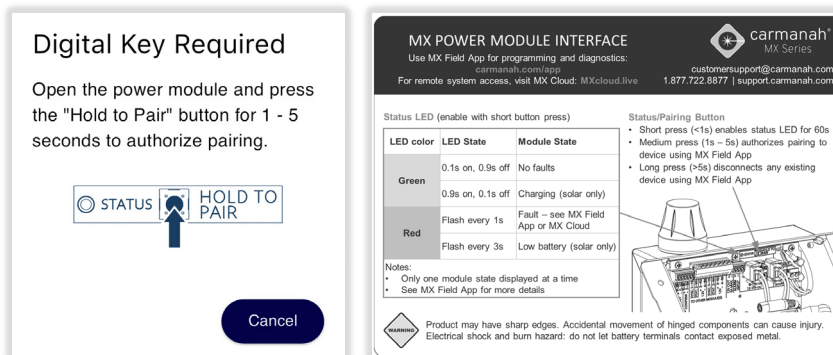


Nearby MX systems will be presented on this screen with the following information:

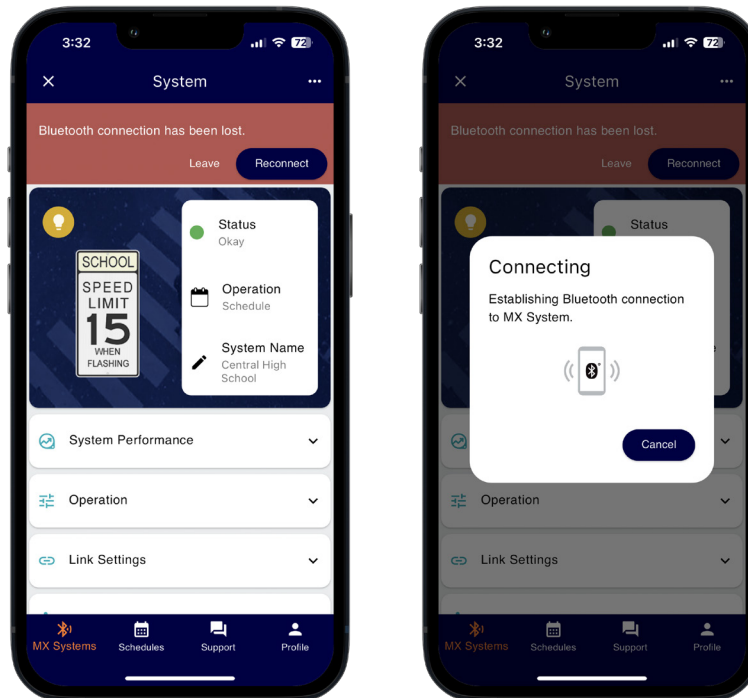
- Each MX system will display the system’s name or serial number.
- Each MX system will have a “reception” icon (📶) to the left that represents the Bluetooth signal strength.
- The MX systems will be displayed from strongest to weakest signal strength.
- An MX system may show a “key” icon (🔑):
  - key icon present – a “digital key” has been received from a previous pairing or directly from MX Cloud as an authorized user to the account. A current MX Cloud subscription and Internet connection is required to receive a digital key from MX Cloud.
  - key icon missing – requires the use of the pairing button (see Pairing Process).
- If the system is linked with one or more other MX systems, there will be a “Linked” label (🔗 Linked). This is color coded to show which MX systems are linked with each other in the immediate vicinity. Color displayed can change and is randomized. See [Section 3.6](#) for more information.

## Pairing Process

Gain access to the power module and hold the pairing button for 1 – 5 seconds. This provides your mobile device with a digital key to access the system via the app. The app will retain the digital key for 14 days without having to sign in again. Once your session has expired you will simply need to sign in with your credentials again and the app will automatically download all the digital keys for systems you have paired with previously. See [Section 8.1](#) for more information.



Once paired and connected, the app will automatically disconnect you from the system if you have been inactive for too long. Tap on the Reconnect button to resume your connection.



### NOTE

If a system is paired with another user's mobile device, it will not be available on the Nearby MX Systems screen. You may need to tap on the refresh button or swipe down on the center of the screen to check for new systems.

### NOTE

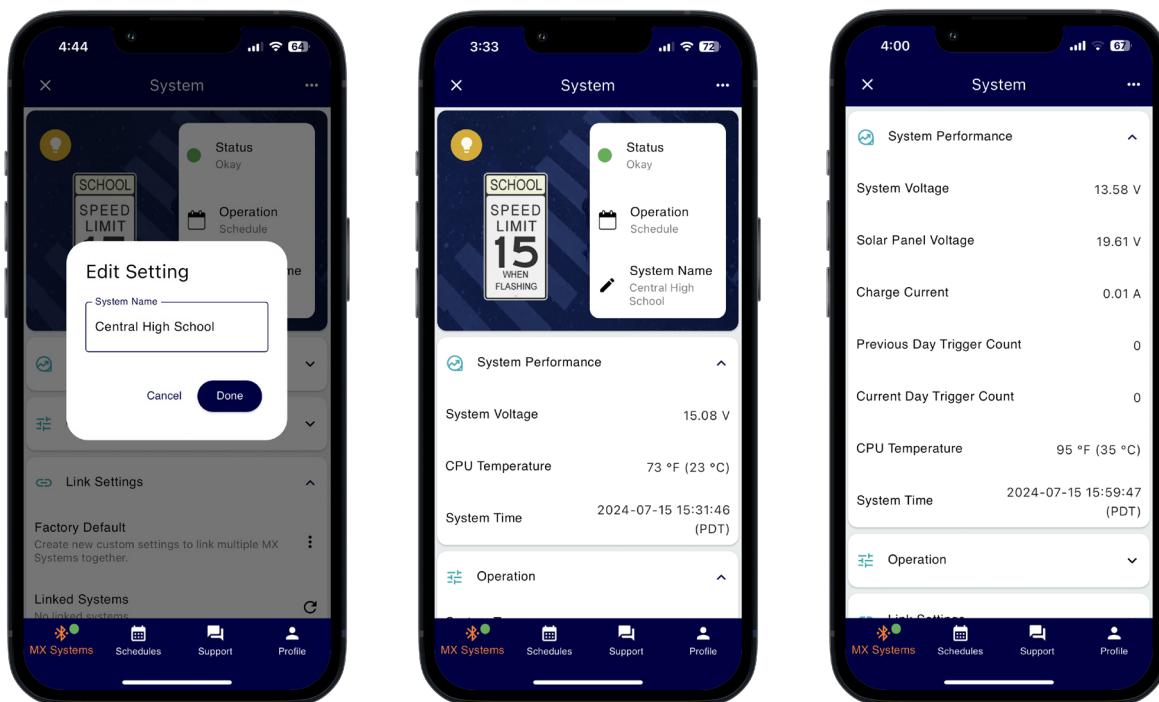
The pairing process is not required if you are an authorized user in the MX Cloud account this system belongs to.

## 2.3 System Setup

Once paired, you will be taken to the System screen. From here, you can change default settings and see the system's status and parameters.

### Initial Setup

1. Perform a firmware update, if available – see [Section 4.5](#).
2. Rename system and set application type – see [Section 3.3](#).
3. Ensure system/battery voltage is reporting properly – see [Section 3.4](#).
4. For solar systems, ensure solar panel voltage is reporting properly – see [Section 3.4](#).
5. Follow one of the application types for your install:
  - a. Crosswalk beacons – see [Section 5.2](#).
  - b. School zone beacons – see [Section 5.3](#).
  - c. 24-hour beacons – see [Section 5.4](#).
  - d. Radar-triggered warning signs – see [Section 5.5](#).
  - e. Chevron warning signs – see [Section 5.6](#).
  - f. Wrong-way driver warning signs – see [Section 5.7](#).



#### NOTE

Typical adjustments to the default settings include: linking systems (synchronized flashing), flash duration length, nighttime intensity percentage or changing the operation mode (if applicable).

#### NOTE

If a firmware update is available it will be noted on the System screen. It is recommended to update the firmware for all systems on site when available.

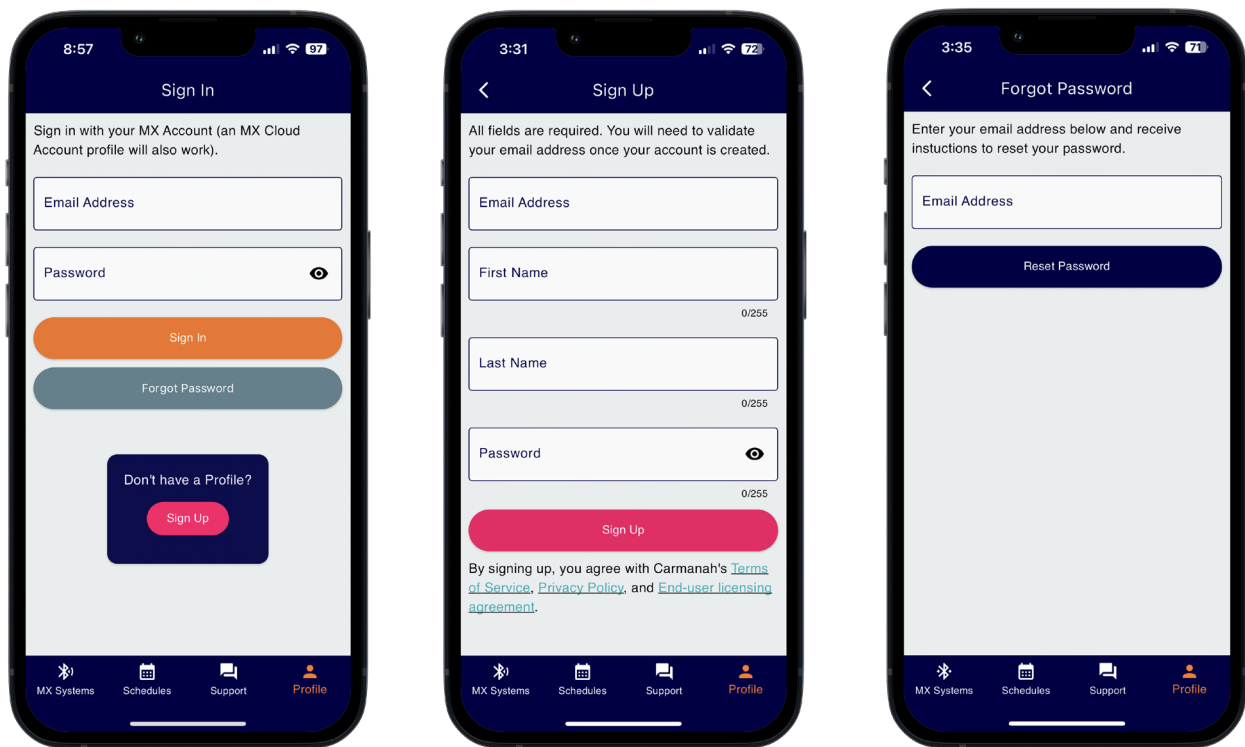
## 3.0 Navigation and Operations

### 3.1 Sign In & Sign Up

The Sign In screen will be the first to appear when opening the app. If you do not already have a Profile, you will be required to tap on the Sign Up button.

Fill out the information required to sign up for a Profile. Once you have validated your Profile using your email address you can proceed to signing in using your credentials.

If you have forgotten your password, you can tap on the Forgot Password button and follow the instructions to reset it.

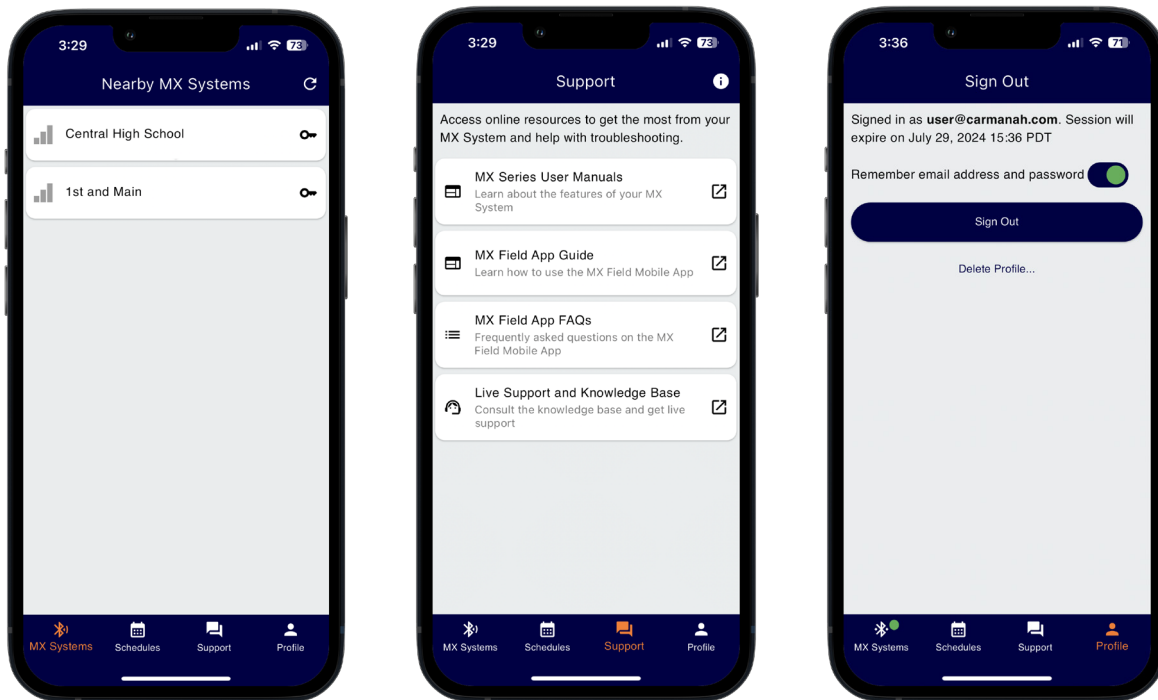


## 3.2 Nearby MX Systems Screen

The Nearby MX Systems screen is available once signed into your Profile. The app will display all detected MX systems in the immediate vicinity and will be sorted by signal strength. The MX system with the strongest signal strength will be at the top of the list. MX systems are automatically detected upon first entering this screen. The list can be refreshed manually by tapping the refresh button in the upper right or by swiping down on the screen.

At the bottom of the screen is a dock with additional functions:

- **MX Systems** – back to the main screen to scan for available systems.
- **Schedules** – manage your school zone schedules
- **Support** – access links to various manuals, FAQ and live support. See [Section 7.1](#) for more information.
- **Profile** – manage your session and sign out. See [Section 8.1](#) for more information.



### NOTE

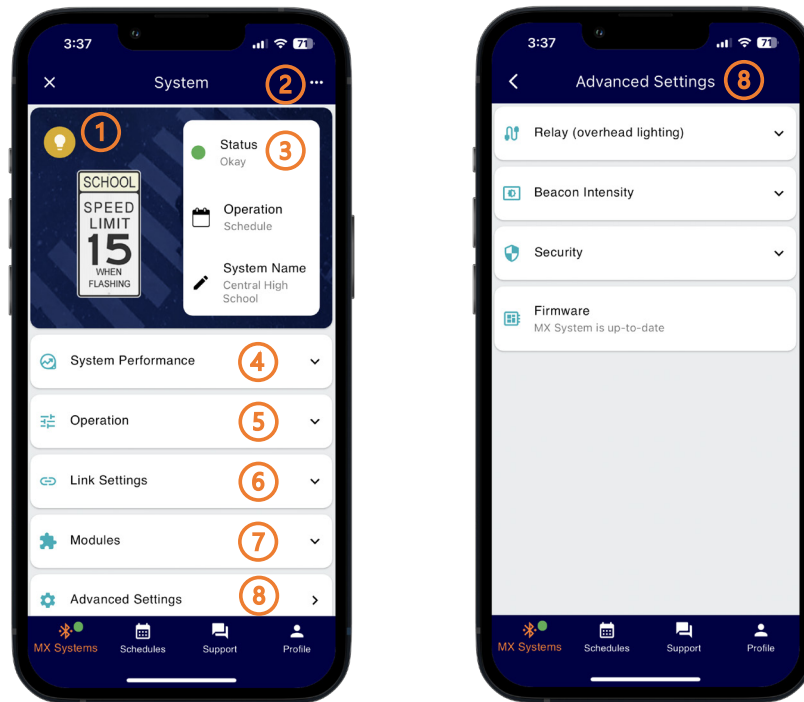
Follow the pairing procedure in [Section 2.2](#) to connect to the system. When paired to a system, there will be a green dot next to the MX Systems icon in the bottom dock.

### NOTE

An MX system will not appear in the list if another mobile device is paired to it.

### 3.3 System Screen

The System screen will appear after you have successfully paired with a system. This screen will contain a variety of read-only statuses/statistics and configuration options.



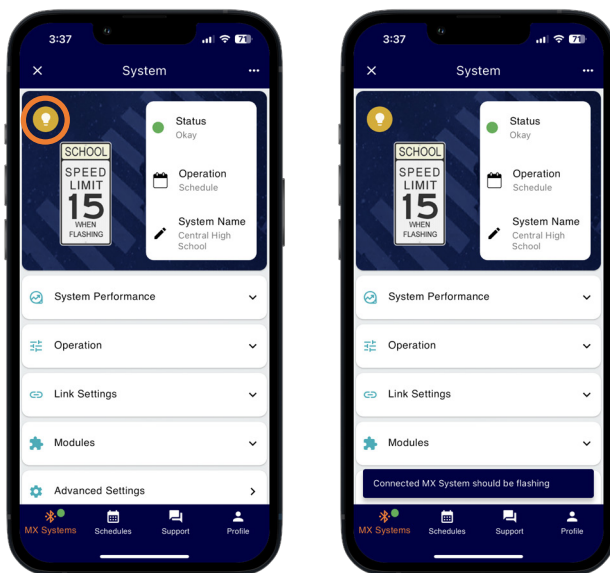
1. Identify System – flashes the beacon/LED sign to verify which system you are paired with.
2. Reboot System – performs a soft reboot on the system.
3. System Information:
  - a. Status – displays current system status.
  - b. Operation – displays current operation mode.
  - c. System name – displays system name.
4. System Performance drop-down – provides read-only performance data.
5. Operation drop-down – provides operation level settings and system type. These options will change based on which operation mode you are in, and which flasher module(s) are connected to the system. Rectangular rapid flashing beacons (RRFB modules) can only operate in Trigger/Standby operation mode.
6. Link Settings drop-down – provides wireless settings to link multiple MX systems together for flash synchronization.
7. Modules drop-down – shows the power module and flasher module(s) connected to the system.
8. Advanced Settings – additional functions.

**NOTE**

Swipe down on the screen to refresh the read-only values. Tap on the “close” button (X) in the top left to disconnect from the system and return to the Nearby MX Systems screen.

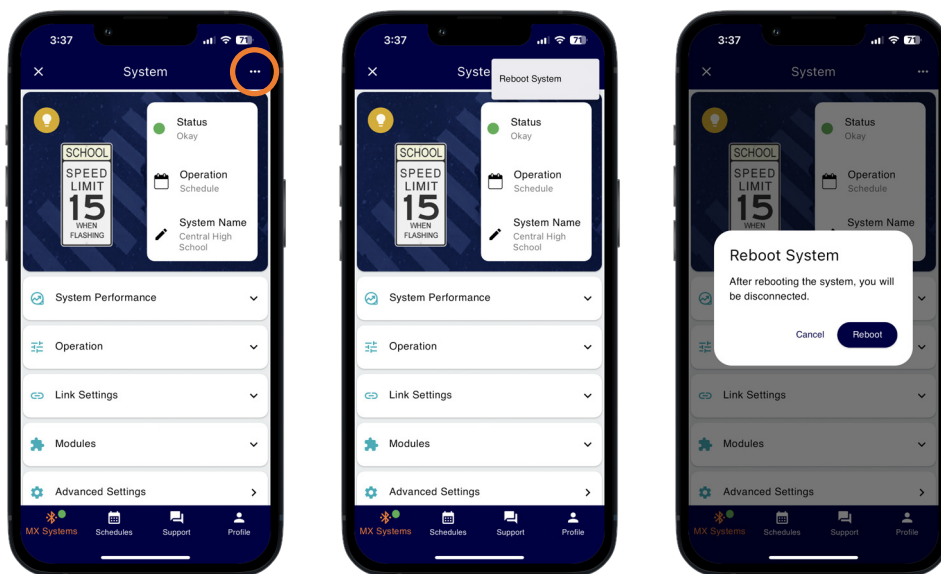
## Identify System

Tap on the yellow light bulb in the upper left corner to verify the system you are paired with. The beacon/LED sign will quickly flash three times, even if it is already flashing its standard pattern. This is useful for confirming you are paired with the correct system.



## Reboot System

Tap on the horizontal ellipsis (⋮) in the upper right corner, tap on Reboot System and then tap Reboot to perform a soft reboot. This is useful if without access to the power module. If you have removed a flasher module from the system without turning power off to the system you can use this to clear a Flasher Removed fault, if present.



### NOTE

Rebooting the system will cause the GPS date/time to reset. The system will reacquire the correct date and time within a few minutes.



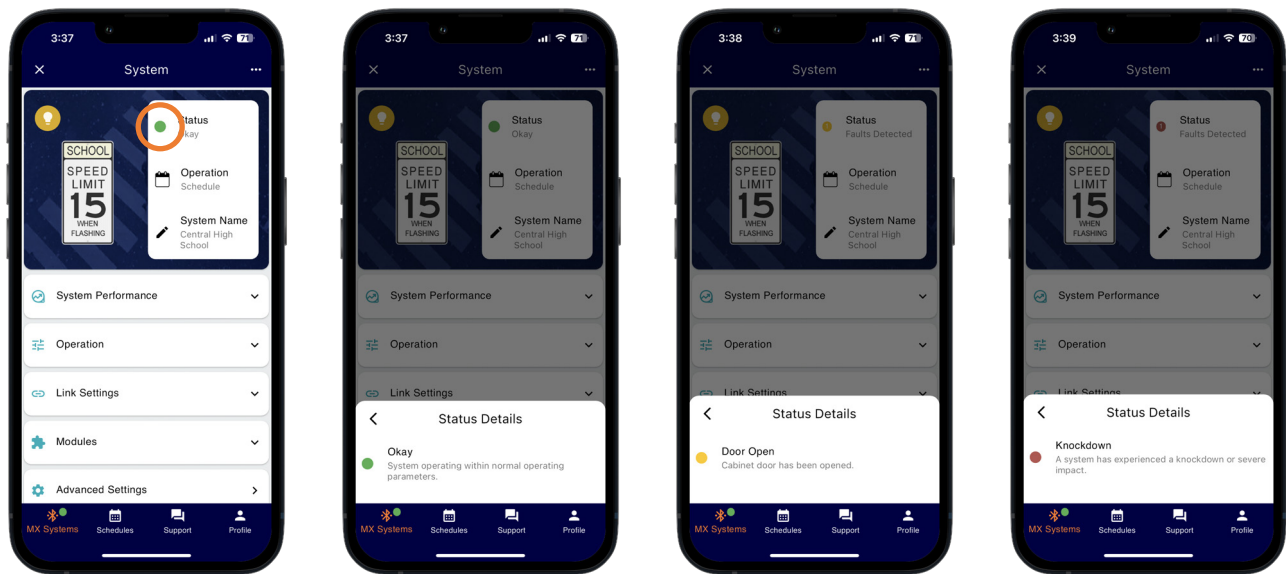
## System Status

The system status is color-coded for quick and easy analysis:

- Green = okay
- Yellow = warning (abnormal condition)
- Red = critical fault

If the color is yellow or red, there will be a number inside of it. This shows how many warnings/critical faults are detected. Under normal circumstances there will be a green circle with the word “Okay” for the status.

Tapping on Status in the upper right will bring up additional details about each fault detected. Swipe down on the Status Details pop-up or tap on the screen to hide the fault description.

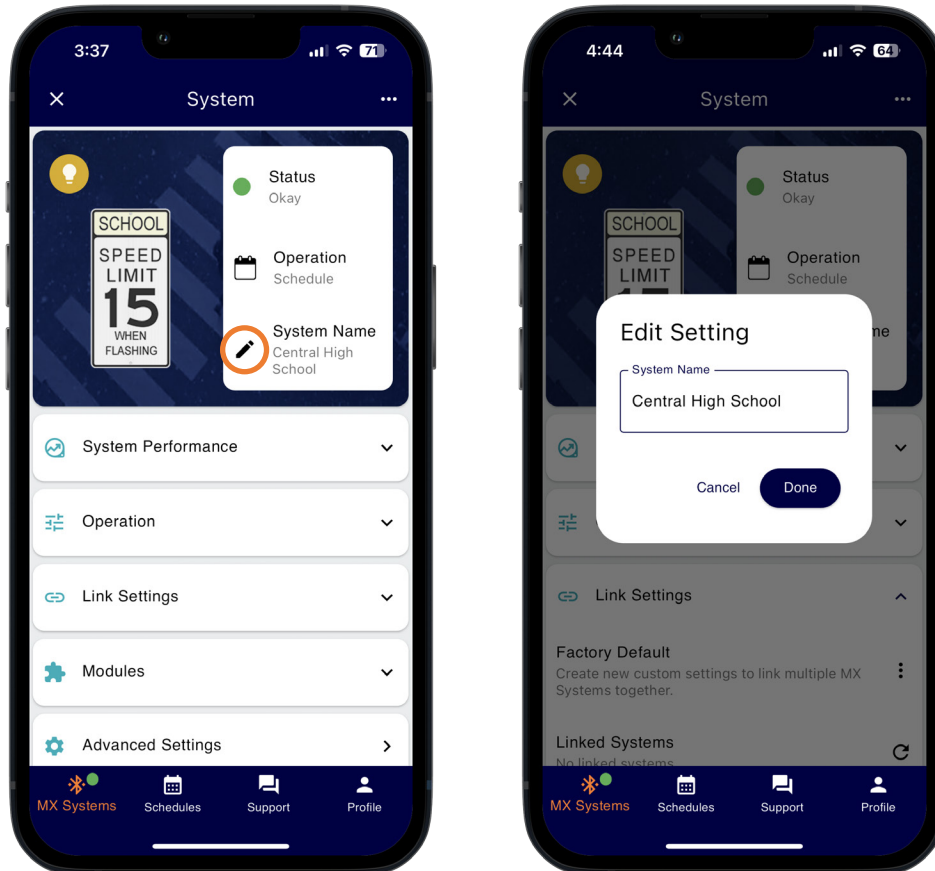


### NOTE

For more information on the list of potential faults and how to resolve them, please visit [support.carmanah.com](https://support.carmanah.com).

## System Name

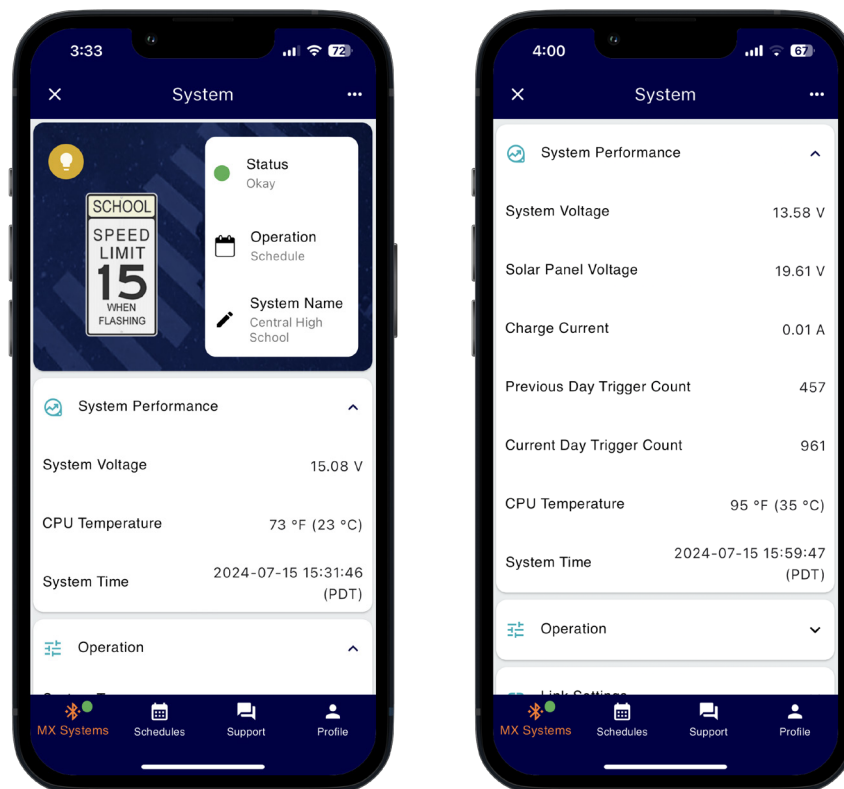
1. Tap on the “edit” button (✎) next to the system name.
2. Enter a system name to make it easier for system identification. The system will now show up with this name in the MX Field App and MX Cloud.
3. Tap Done to complete.



### 3.4 System Performance Drop-Down

The System Performance drop-down menu provides the following information:

- System voltage – current battery (solar) or system (AC) voltage reading.
- Solar panel voltage – current solar panel reading (solar only).
- Charge current – current charging current reading (solar only).
- Previous day trigger count – the number of trigger activations from the previous day. This applies to systems in Trigger/Standby operation mode only.
- Current day trigger count – the number of trigger activations for today. This applies to systems in Trigger/Standby operation mode only.
- CPU temperature – current system temperature reading.
- System time – current date and time reading taken from GPS.



**NOTE** Swipe down on screen to refresh the read-only values.

**NOTE** Information shown will change depending on operation mode and whether solar or AC powered.

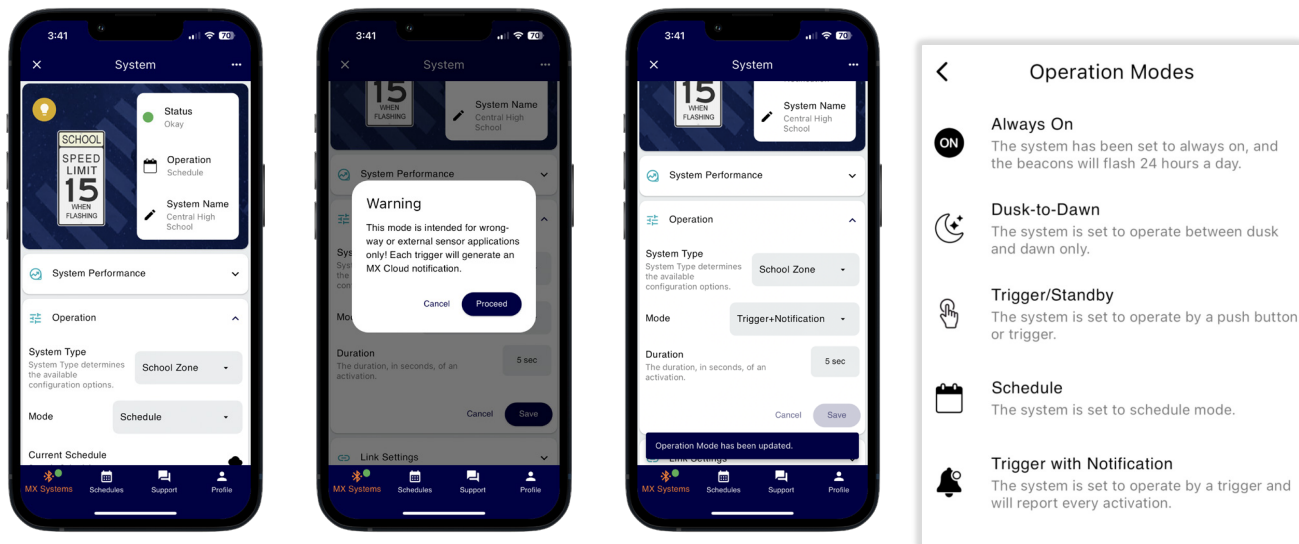
**NOTE** Trigger count is calculated by the total activation time divided by the flash duration set.

## 3.5 Operation Drop-Down

The Operation drop-down menu provides the following functions for configuring how the system operates:

- **Mode** – sets the way the system will operate.
  - Always On – beacon(s) will flash 24 hours a day.
  - Dusk-to-Dawn – beacon(s) flash continuously during nighttime only.
  - Trigger/Standby – beacon(s) are activated by a push button or external trigger, such as a pedestrian sensor.
  - Trigger with Notification – beacon(s) are activated by an external trigger or sensor. An SMS and/or email alert is sent each time the system is triggered. Requires an MX Cloud profile with notifications enabled and an active MX Cloud subscription for the system.
  - Schedule – beacon(s) flash based on a user generated schedule.
- **Duration** – sets the flash duration length (Trigger/Standby mode only).

See [Section 5](#) for programming the system based on the application type. Tapping on the operation mode programmed in the upper right will bring up an explanation of each mode.



**NOTE**

Trigger with Notification is intended to be used in applications with an external trigger or sensor: such as wrong-way driver, high water sensor...etc.

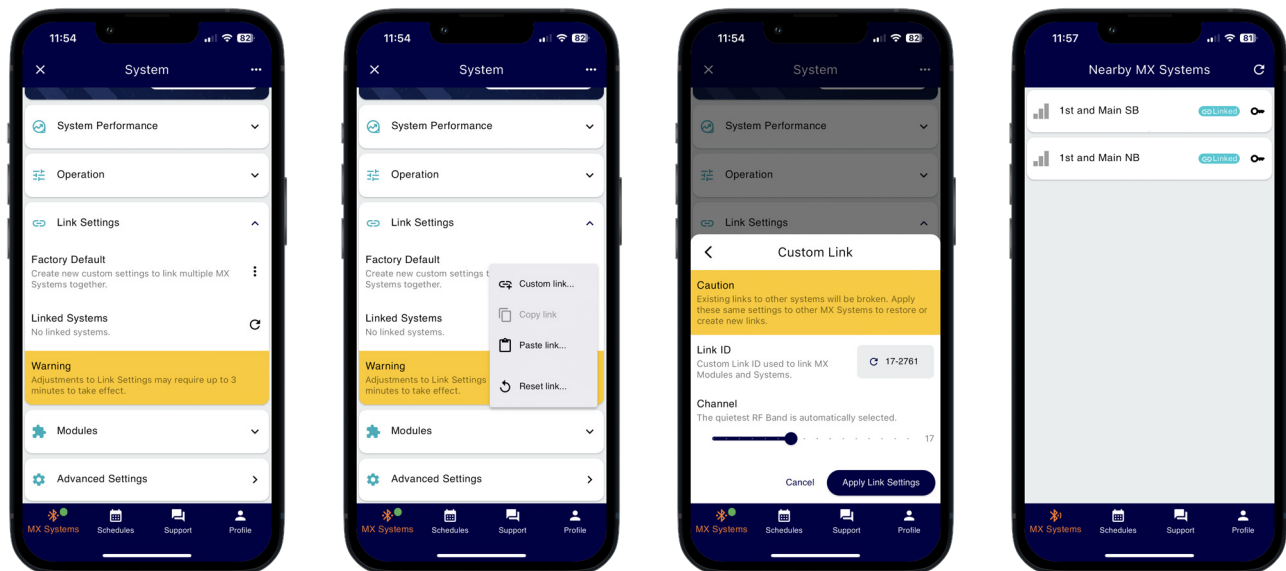
## 3.6 Link Settings Drop-Down

The Link Settings drop-down menu allows linking two or more systems with each other for synchronized flashing. Linked systems share the same wireless settings, which include: Link ID, Channel and Link Key. Tap on the vertical ellipsis (⋮) to expose the following functions:

Factory Default/Custom Link – uniquely generated settings.

- Custom Link – generates a random link ID/link key and chooses the optimal channel to form a custom link. These settings are automatically copied to link with another system.
  - Tapping on the Link ID # will allow manual randomizing the ID. Adjusting the channel is typically not required.
- Copy Link – copies the existing settings to apply to another system to form a link.
  - Only available if system is not on the Factory Default settings.
- Paste Link – exposes all systems that have been copied to apply to another system to form a link.
- Reset Link – resets wireless settings to factory default.

Linked Systems – a list of all nearby systems that are linked to the system you are paired with. Tap on the refresh button to the right to update this list.



### NOTE

If you see a gray Linked icon with a flag (  ), that signifies the RRFB system(s) are using the factory link settings and it is **strongly recommended** to manually link these.

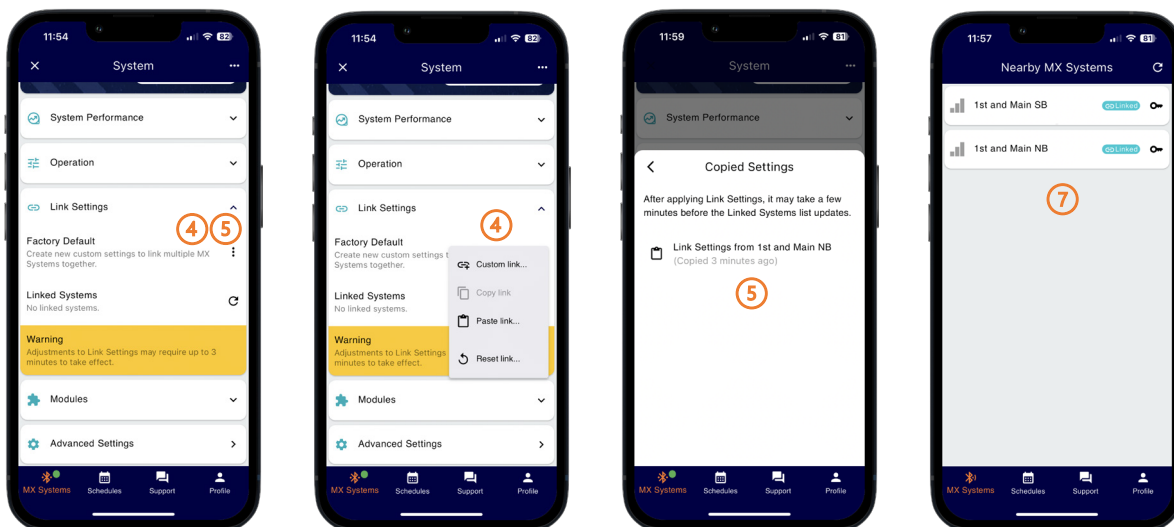
## Linking Systems

RRFB flasher modules are unique. Once a system detects that it is operating an RRFB flasher module, the system will apply default RRFB link settings. All RRFBs within range (line of sight up to 1000') will be automatically linked together and activate each other when using these default RRFB link settings. Establishing a new link is recommended for each unique crossing to avoid crosstalk with other nearby crossings using MX systems.

### Creating a New Link

To link MX systems together, follow the steps below:

1. Pair with one of the systems to link.
2. Tap on Link Settings.
3. Confirm there are no linked systems currently. Making any changes will break an existing link.
4. Tap on vertical ellipsis, Custom Link and then Apply Link Settings.
5. Disconnect from the system and pair with the next system to link to. Navigate to Link Settings, tap on the vertical ellipsis and then Paste Link. The app will list all systems you have copied settings from. Choose the one you wish to link to.
6. Perform step 5 for all additional systems to link.
7. The Linked Systems list will take a few minutes to show all linked systems. There will also be a color-coded linked label for these systems on the Nearby MX Systems screen. All systems linked will now have synchronized flashing.



#### NOTE

To break a link, create a new custom link as per the instructions above. It will take a few minutes to update and reflect the system is no longer linked with any other system.

#### NOTE

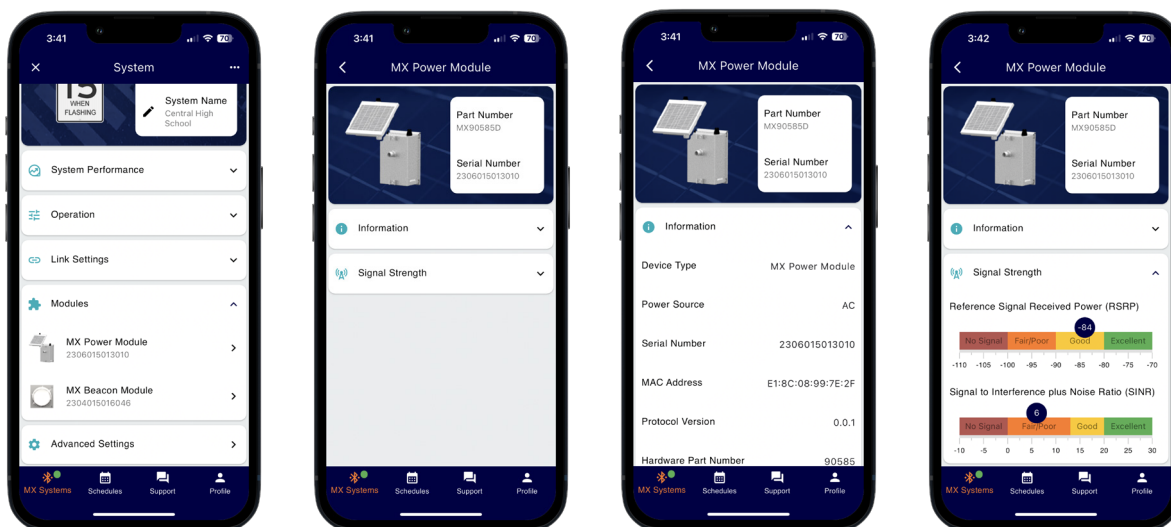
RRFBs are unique and automatically link to all available local RRFB systems. While this is convenient, we still **strongly recommend** you manually link every individual RRFB crosswalk. Manual linking will also help with accurate activation data in MX Cloud across all systems at the crossings.

### 3.7 Modules Drop-Down

The Modules drop-down menu lists the power module and flasher module(s) connected to form the system:

- Power module – solar or AC power module.
- Flasher module – flasher type connected to the system (e.g., RRFB, round beacon or LED sign).

Tapping on a power module or flasher module will bring up their individual information screens. This will display a list of general information regarding that module.


**NOTE**

System time and location (latitude/longitude) can be found under MX Power Module. This is useful to confirm the system has a proper GPS fix with date/time from the cellular network.

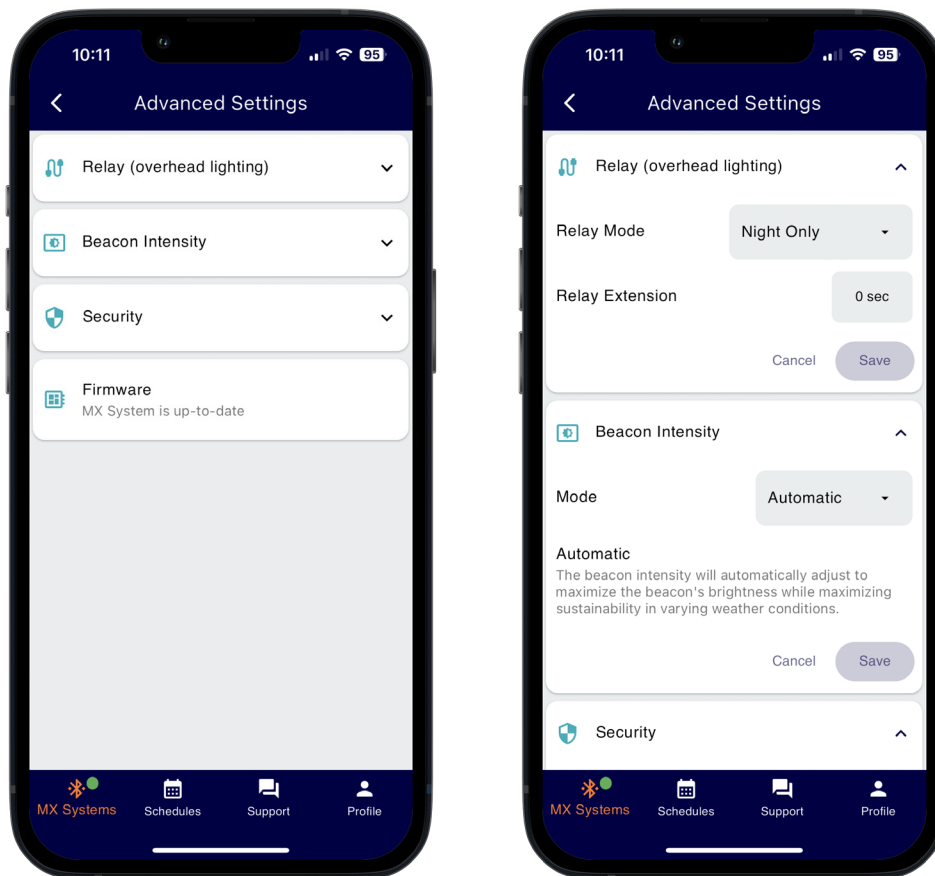
## 4.0 Advanced Settings

### 4.1 Advanced Settings Screen

The Advanced Settings screen contains the following additional functions:

- Relay (for overhead lighting or other third-party devices)
- Beacon Intensity
- Security
- Firmware

Tapping on any drop-down menu will bring up additional functionality.





## 4.2 Relay Drop-Down

The Relay drop-down menu provides settings meant for overhead lighting use (typically for crosswalks). This utilizes the integrated DC relay in all power modules. When the beacon is flashing, the relay output becomes active depending on which mode is selected.

### Relay Mode

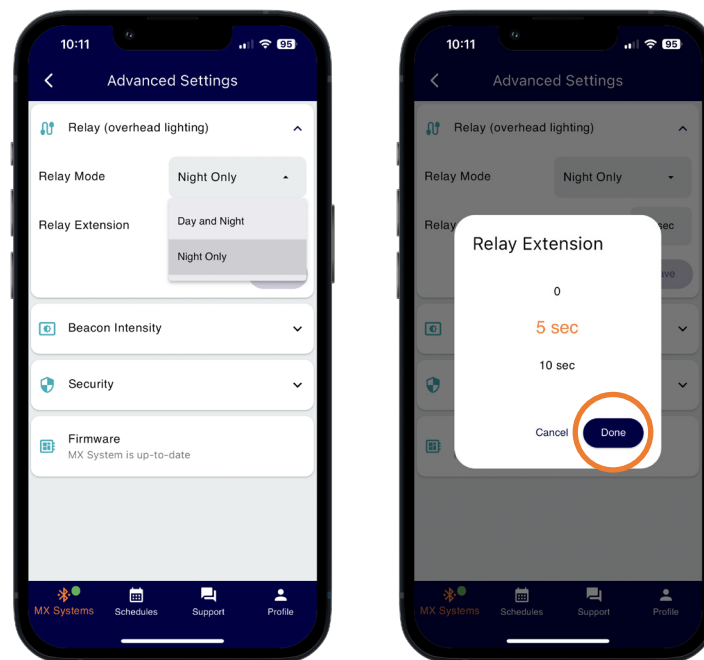
Choose between the following:

- Day and Night – the overhead light is active at all times, when the beacon(s) is flashing.
- Night Only – the overhead light is active at night only, when the beacon(s) is flashing.

### Relay Extension

This is the amount of time to keep the overhead light active after the beacon(s) stops flashing. Extension duration can be set between 0 – 60 seconds.

To confirm the changes, tap Done and then Save to complete.



#### NOTE

It is recommended to leave the relay mode in Night Only. This ensures the lighting fixture only comes on at night when the beacon(s) is flashing. For solar systems, this reduces the power requirements.

#### NOTE

The integrated DC relay uses the 12V OUT (5A MAX) terminals on the power module board. Refer to the appropriate **LEVEL 2** install guide for more information.

#### NOTE

Check the GPS date/time to ensure it is accurate under the System Performance drop-down. Refresh the screen by swiping down to load the latest parameters. If require, perform a soft reboot to have the system reacquire new GPS date/time settings (see [Section 3.3](#)).

## 4.3 Beacon Intensity Drop-Down

The Beacon Intensity drop-down menu provides settings to adjust daytime and nighttime intensity values. By default, the system will be in Auto mode.

### Intensity Setting

Most users will benefit from leaving the system in Auto mode. In Auto mode the system will dynamically adjust brightness to retain system sustainability, while attempting to achieve factory default brightness.

The main function of Manual mode is to override the Auto settings to force a specific intensity (a percentage of the factory default value). This is typically to reduce the intensity if it is too bright. Using Manual mode may compromise sustainability for solar-powered systems.

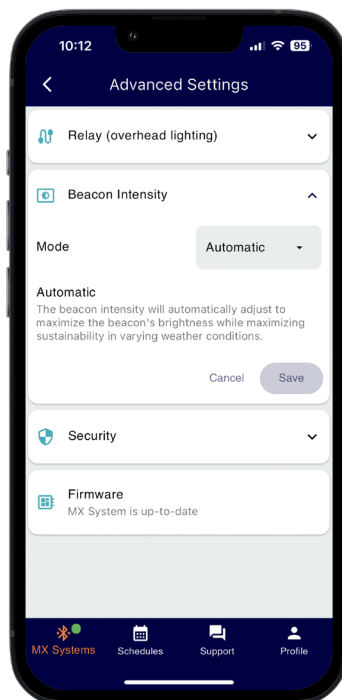
**NOTE**

In Manual mode, parameters that are visible to the user for adjustment are specific to the flasher module(s) connected to the system.

### Auto Mode

The beacon output intensity will automatically adjust to maximize the beacon's brightness while ensuring sustainability in varying weather conditions.

- Meets MUTCD Standards.
- Automatic Light Control (ALC) enabled – allows the system to reduce the beacon brightness in response to low battery states of charge. RRFBs will not use ALC to ensure that SAE J595 standards are adhered to.
- Applies sustainable daytime intensity based on flasher module connected.
- Applies sustainable nighttime intensity based on flasher module connected.



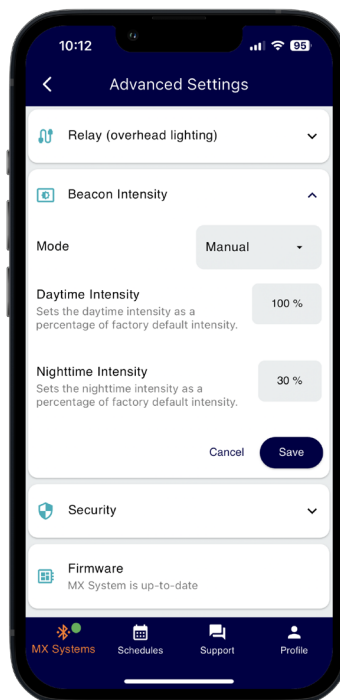
## Manual Mode

The beacon output intensity will be fixed at the percentage set by the user. This is a percentage of the factory default value.

- Automatic Light Control (ALC) disabled – system runs at a fixed intensity.
- User adjustable daytime intensity (percentage of factory default value).
- User adjustable nighttime intensity (percentage of factory default value).

**NOTE**

Refer to the **LEVEL 1** System Planner for more information on MX Series default settings, such as flash patterns, intensity settings and out-of-the-box functionality at [support.carmanah.com](https://support.carmanah.com).



## 4.4 Security Drop-Down

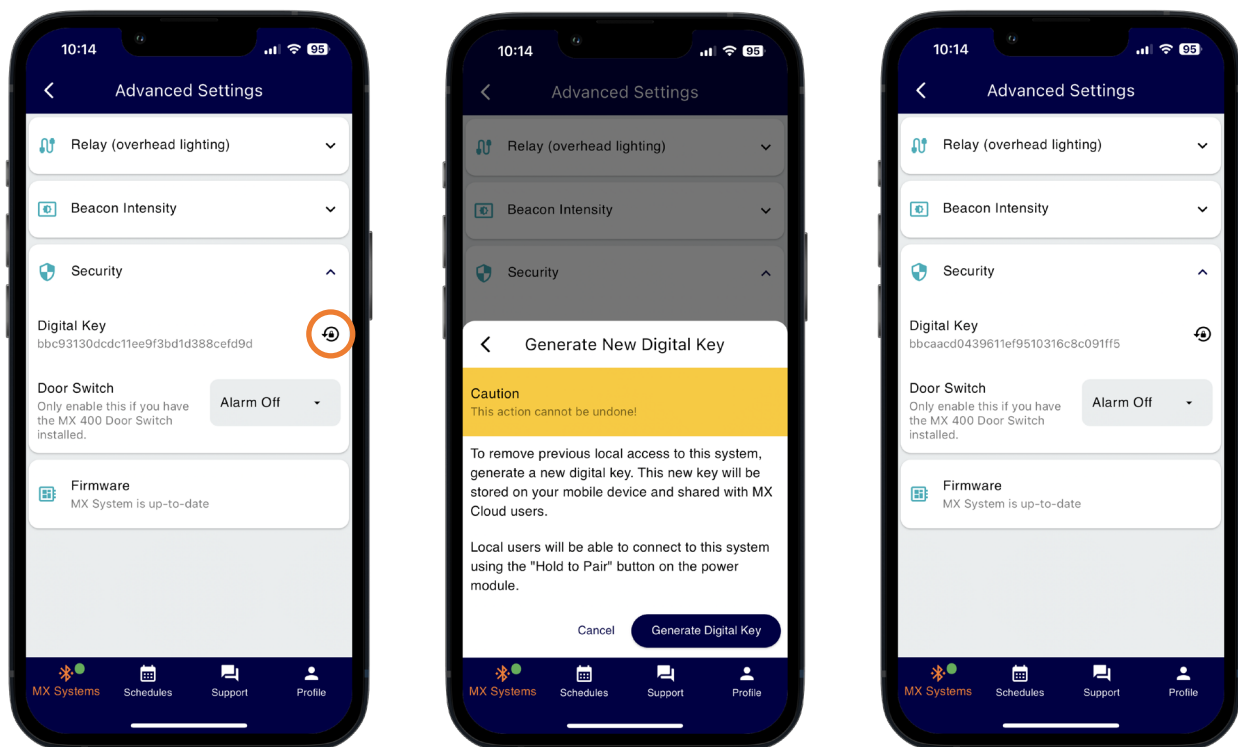
The Security drop-down menu contains the following additional functions:

- Digital Key – shows the unique digital key.
- Door Switch – shows whether the MX 400 Door Switch alarm is enabled or not.

### Digital Key

Tap on the “generate” icon (+) to the right to bring up a dialog box to obtain a new digital key. Generating a new digital key for any or all systems is a way to ensure your systems are secure. Use this function if there is a user that is no longer with your organization, or you would like to cycle the digital keys to ensure any unauthorized user(s) should not have local access.

- Tap on the Generate Digital Key button. You will now see a new key shown.
- The new digital key is updated on the MX system, your mobile device and MX Cloud (if applicable).
- Users with the old digital key will no longer be able to automatically pair with this system and will require physical access to the system for pairing using the pairing button on the power module. See [Section 2.2](#) for more information.
- Authorized users on the MX Cloud account will automatically receive the new digital key through the app. This requires an active cellular or Wi-Fi connection on your mobile device.



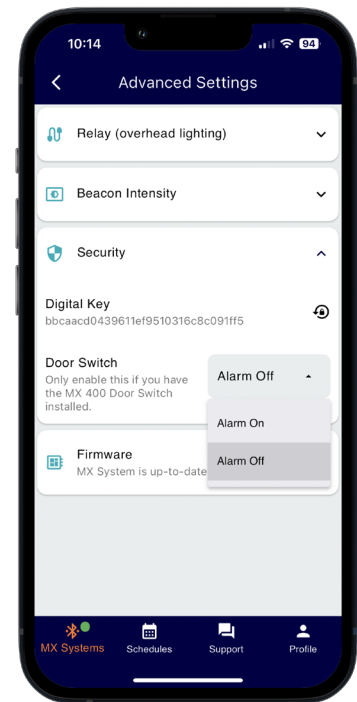
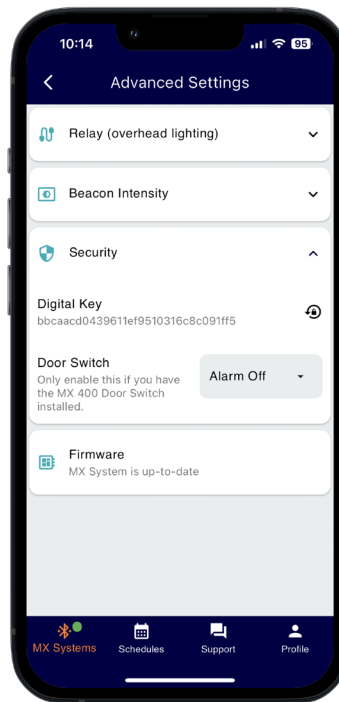
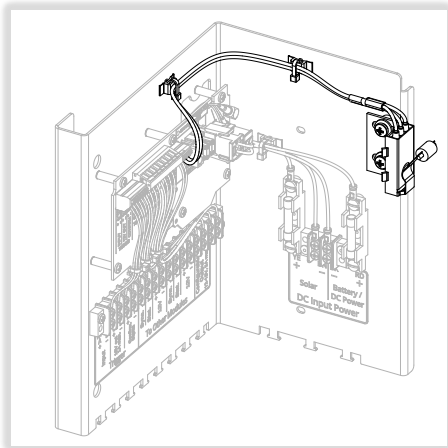
**NOTE**

The digital key will be unique. Example above for illustrative purposes only.

## Door Switch

If you have the MX 400 Door Switch Kit, you need to enable its function under this menu. Tap on the menu to the right and change the setting to Alarm On.

This kit is intended specifically for MX Cloud users. The system will create an alert each time the cabinet door is opened and provide confirmation whether it was closed properly.



**NOTE**

Do not enable this function if you do not have the door switch installed. Doing so will create an erroneous alert.

## 4.5 Firmware Screen

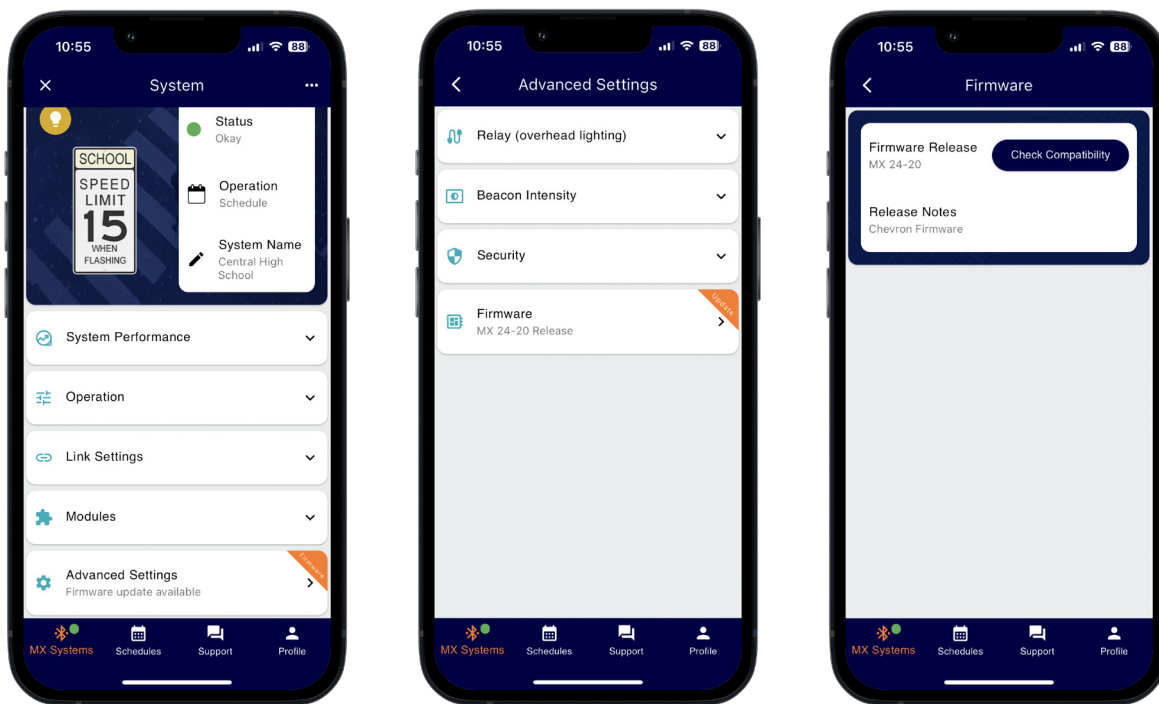
The Firmware screen provides the ability to apply firmware updates to the power module and flasher module(s) connected to the system.

If a firmware update is available the latest release will be shown. Tap on Firmware to proceed.

### Firmware Update Procedure

The latest update will display release notes with information on feature additions or changes to the system. To proceed with updating the firmware, follow the steps below:

1. Tap on Check Compatibility. The app will establish a connection to each module wired to the system. The module will display its current firmware version and the newest version available.



#### NOTE

The beacon(s) will continually flash during the firmware installation procedure. This procedure can take up to five minutes per system to fully complete.

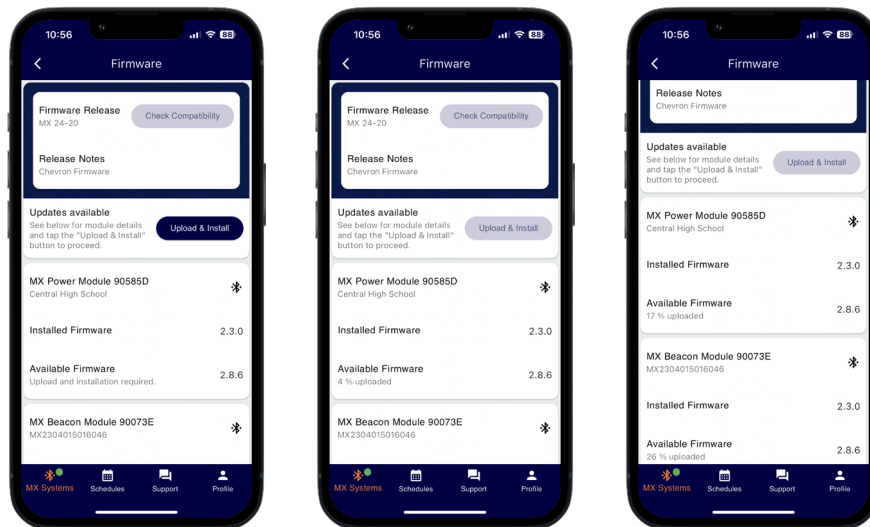
During the firmware update procedure, **do not** do any of the following:



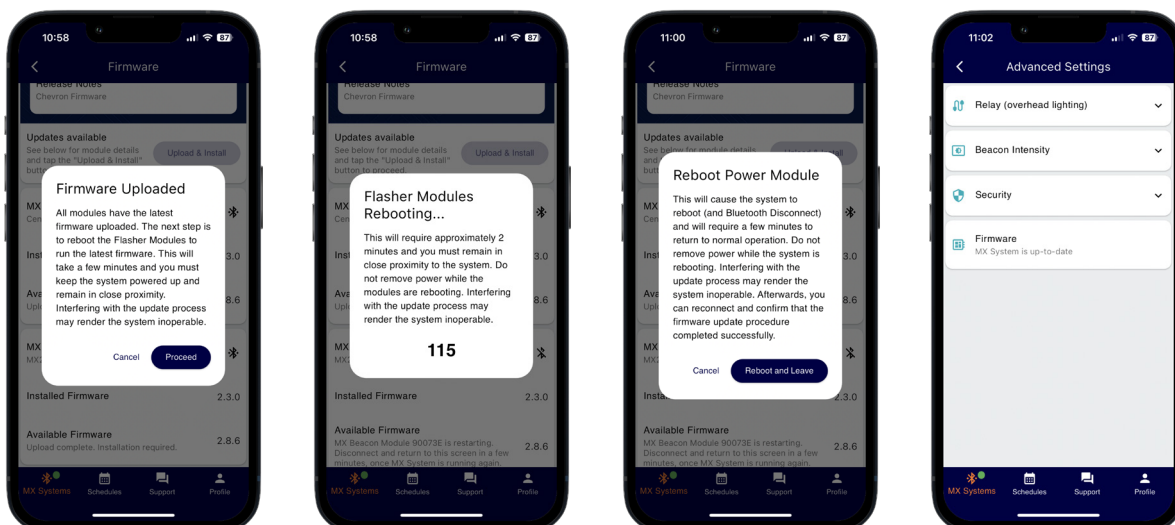
- Move away from the system
- Power down the system
- Minimize or close the app
- Allow your mobile device screen to lock
- Power down your mobile device
- Turn off Bluetooth on your mobile device

Interfering with the update process may render the system inoperable.

2. Ensure each module shows an available firmware. If this is not displayed the app has not established a connection to that particular module. Move closer to the system and try again.
  - a. A successful connection will show an active Bluetooth connection icon (⌵).
3. Tap on Upload & Install. This will start uploading the firmware file(s) from your mobile device to each module. **Do not move away from the system or minimize/close the app.**



4. Once complete tap on the Upload & Install button again to begin installation of the firmware. Read the warning prior to installing the firmware. Tap on Proceed to continue.
5. The system will now proceed with rebooting the flasher module(s), which will require two minutes.
6. After two minutes tap Reboot and Leave to reboot the power module. This will disconnect you from the system. It will take a few minutes before the system stops flashing before it has completed the update.
7. Reconnect to the system and ensure the firmware is up-to-date.



## 5.0 System Application Settings

### 5.1 Applications Overview

Model	Application	Operation Mode(s)
R920-MX	Crosswalk system ( <a href="#">Section 5.2</a> )	Trigger/Standby (pedestrian activated)
R829-MX	School zone system ( <a href="#">Section 5.3</a> )	Schedule
R247-MX	24-hour flashing system ( <a href="#">Section 5.4</a> ) Vehicle detection system ( <a href="#">Section 5.5</a> )	Always On (24-hour) Trigger/Standby (vehicle activated) Dusk-to-Dawn (nighttime only)
CHEVRON-MX	Horizontal alignment (chevron) system ( <a href="#">Section 5.6</a> )	Always On (24-hour) Trigger/Standby (vehicle activated) Dusk-to-Dawn (nighttime only)
WWD-MX	Wrong-way driver warning system ( <a href="#">Section 5.7</a> )	Always On (24-hour) Trigger with Notification (vehicle activated with alert) Dusk-to-Dawn (nighttime only)

**NOTE** See [Section 3.5](#) for an explanation for each operation mode.

**NOTE** CHEVRON-MX systems can flash using a synchronized or sequential flash pattern.

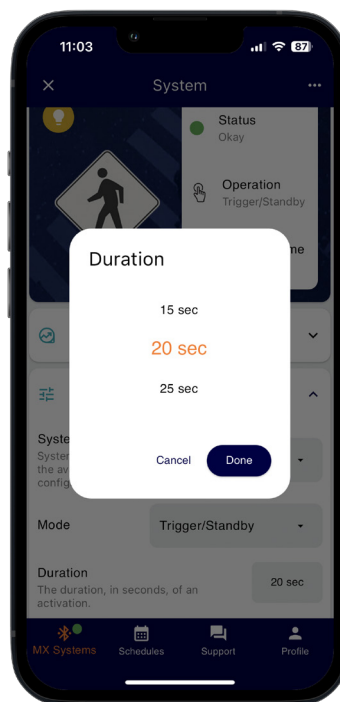
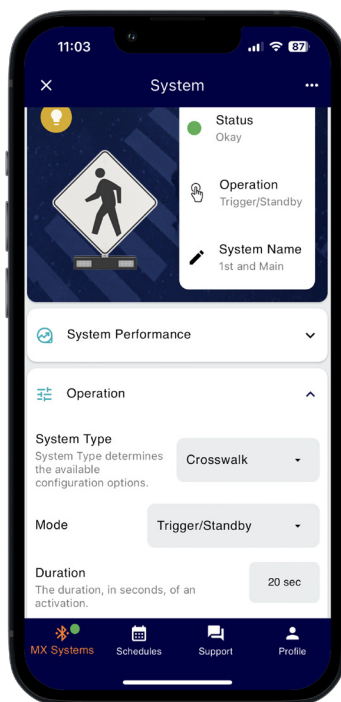
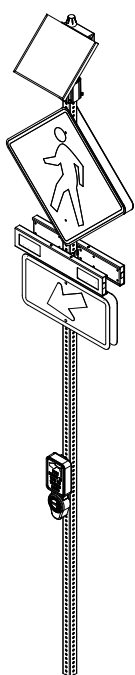


## 5.2 Application 1 – R920-MX Crosswalk Systems

For crosswalk applications, follow the steps below for each system:

### Rectangular Rapid Flashing Beacons (RRFBs)

1. Pair with the system as per [Section 2.2](#).
2. Open the Operation drop-down menu. Operation mode will automatically be set to Trigger/Standby for RRFBs. **This cannot be changed by the end user.**
3. Set duration accordingly for the application. Ensure all systems are on the same duration setting.
  - a. Changes to flash duration are not broadcast to other systems nearby, even if they are linked together. The default flash duration is 20 seconds.
4. Tap Done and then Save to complete.



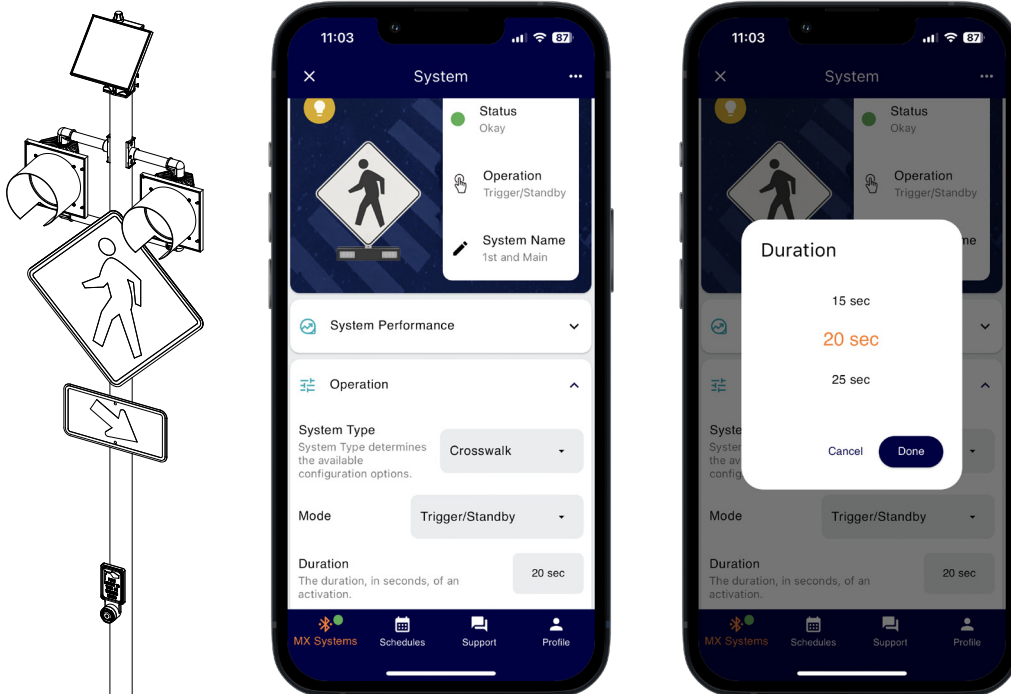
RRFB flasher modules are unique. Once a system detects that it is operating an RRFB flasher module, the system will apply default RRFB link settings. All RRFBs within range (line of sight up to 1000') will be automatically linked together and activate each other when using these default RRFB link settings. Establishing a new link is recommended for each unique crossing to avoid crosstalk with other nearby crossings using MX systems.

#### NOTE

If you have crosstalk between multiple crossings nearby you will want to follow the steps for breaking the link and creating a new one as shown in [Section 3.6](#).

## Beacon and LED Signs

1. Pair with the system as per [Section 2.2](#).
2. Open the Operation drop-down menu. Set the operation mode to Trigger/Standby.
3. Set duration accordingly for the application. Ensure all systems are on the same duration setting.
  - a. Changes to flash duration are not broadcast to other systems nearby, even if they are linked together. The default flash duration is 20 seconds.
4. Tap Done and then Save to complete
5. Link applicable systems together for flash synchronization. See [Section 3.6](#).



### NOTE

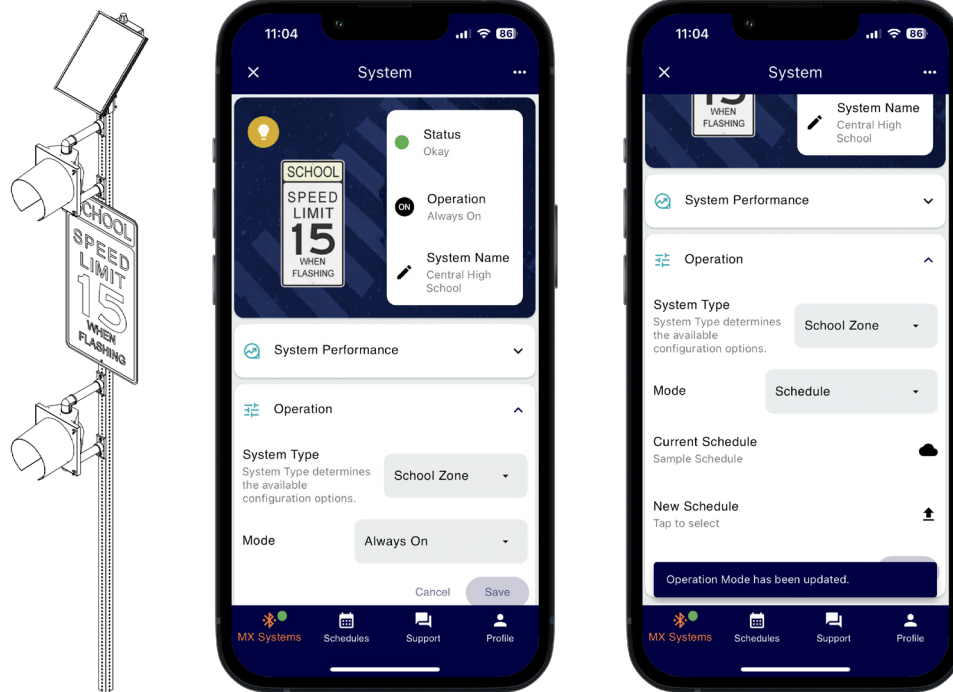
Beacons and LED signs will flash continuously by default using the Always On operating mode.

## 5.3 Application 2 – R829-MX School Zone Beacon Systems

For school zone applications, follow the steps below for each system:

### School Zone Beacons

1. Pair with the system as per [Section 2.2](#).
2. Tap on Schedules in the bottom dock. Create a schedule as per [Section 6](#).
3. Open the Operation drop-down menu. Set the operation mode to Schedule.
4. Tap on the “upload” button (⬆️) next to New Schedule. Select the schedule you wish to upload to the system.
5. Tap Save to complete. The Current Schedule status will now show the uploaded schedule.




#### NOTE

Beacons and LED signs will flash continuously by default using the Always On operating mode.

#### NOTE

Schedules in MX Field App use a collection of events when beacons are on or off (unless pedestrian triggered). See [Section 6](#) for more information.

## School Zone Beacons with Pedestrian Activation

1. Pair with the system as per [Section 2.2](#).
2. Open the Operation drop-down menu. Set the operation mode to Trigger/Standby.
3. Set duration accordingly for the application. Ensure all systems are on the same duration setting. Tap Save when complete.
  - a. Changes to flash duration are not broadcast to other systems nearby, even if they are linked together. The default flash duration is 20 seconds.
4. Tap on Schedules in the bottom dock. Create a schedule as per [Section 6](#).
5. Navigate back to the Operation drop-down menu. Set the operation mode to Schedule.
6. Tap on the “upload” button () next to New Schedule. Select the schedule you wish to upload to the system.
7. Tap Save to complete. The Current Schedule status will now show the uploaded schedule.
8. Link applicable systems together for flash synchronization. See [Section 3.6](#).

**NOTE**

This configuration allows for scheduled operation of beacons or LED signs. When a system's scheduled event is “Beacons Off”, pedestrian activation will be available to trigger the system.

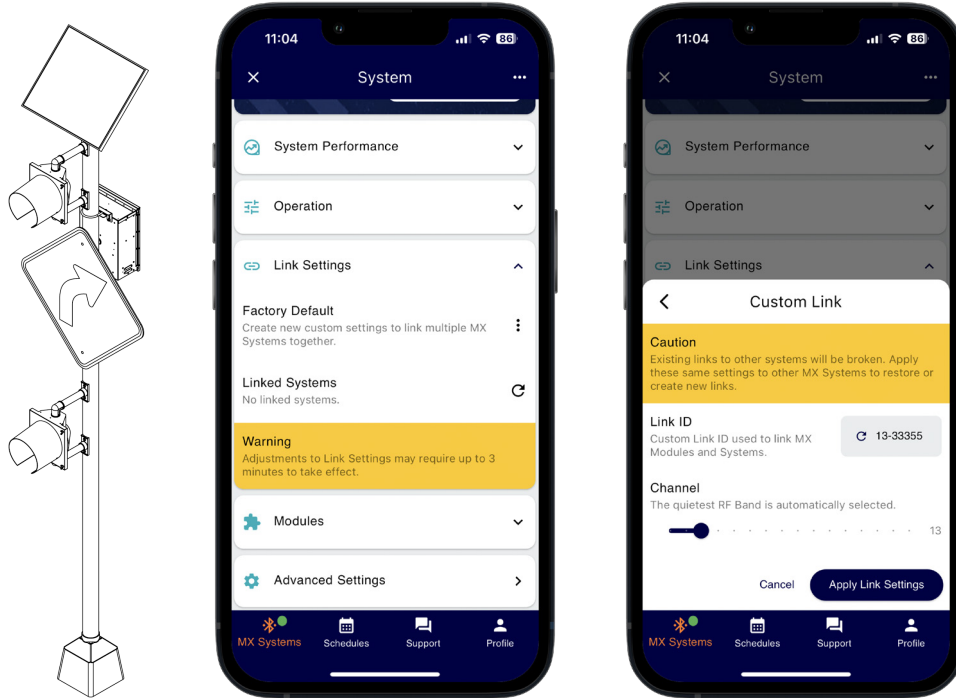
**NOTE**

All linked systems will need to be scheduled independently. These systems will synchronize with each other once flashing.

## 5.4 Application 3 – R247-MX 24-Hour Beacon Systems

For 24-hour beacon applications, the system will be functional out-of-the-box. To synchronize multiple systems, follow the steps below for each system:

1. Pair with the system as per [Section 2.2](#).
2. Link systems together for flash synchronization. See [Section 3.6](#).



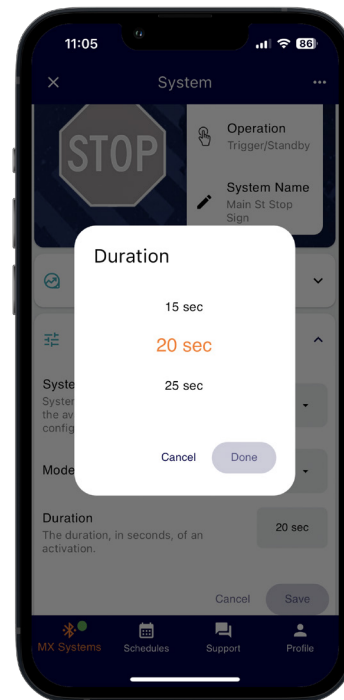
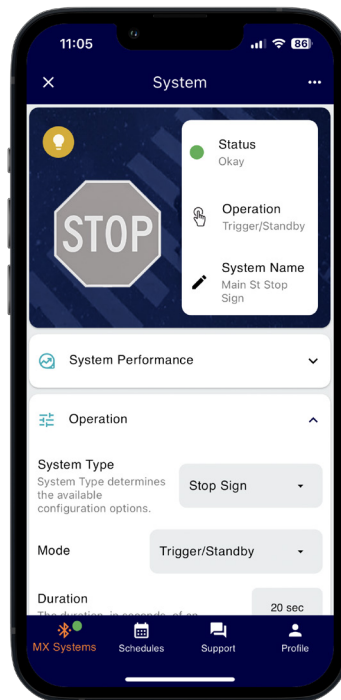
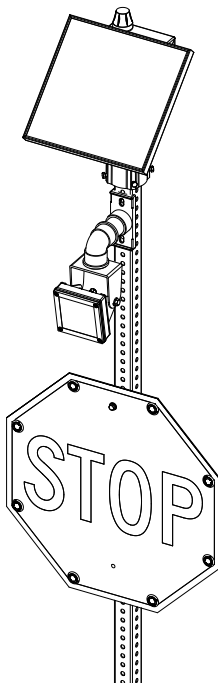
### NOTE

Beacons and LED signs will flash continuously by default using the Always On operating mode.

## 5.5 Application 4 – R247-MX Radar-Triggered Warning Signs

For radar-triggered applications, follow the steps below for each system:

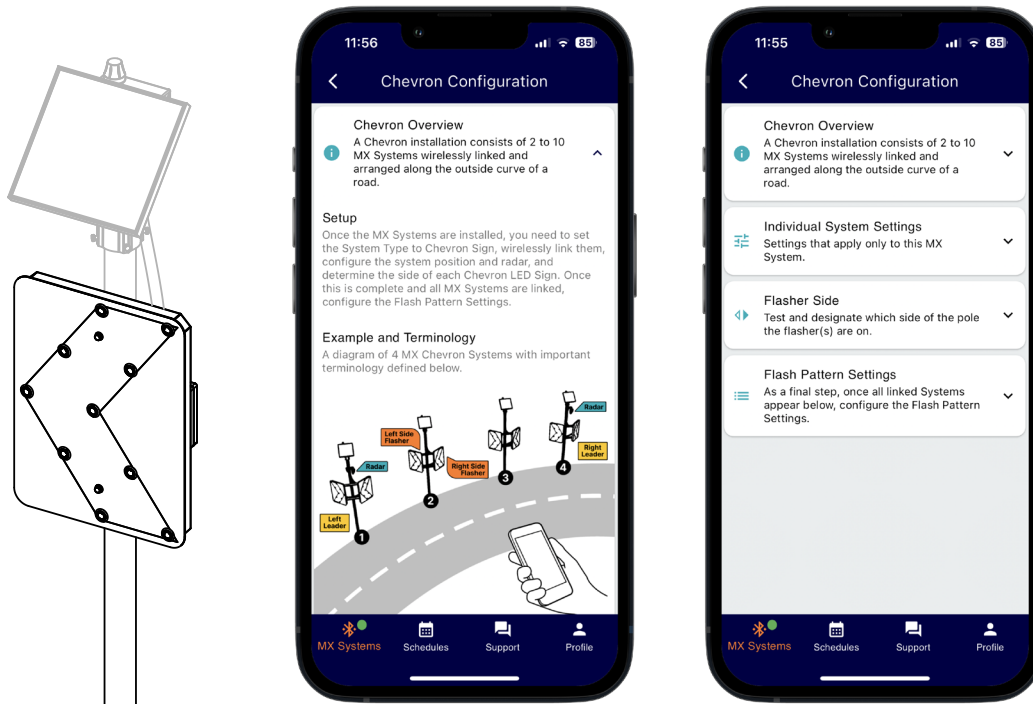
1. Pair with the system as per [Section 2.2](#).
2. Open the Operation drop-down menu. Set the operation mode to Trigger/Standby.
3. Set duration accordingly for the application. The default flash duration is 20 seconds.
4. Tap Done and then Save to complete.
5. If applicable, link systems together for flash synchronization. See [Section 3.6](#).
6. Ensure the radar has been programmed accordingly. Refer to the appropriate **LEVEL 4** install guide for more information.


**NOTE**

LED signs will flash continuously by default using the Always On operating mode.

## 5.6 Application 5 – CHEVRON-MX Chevron Warning Signs

For chevron warning sign applications, follow the Chevron Commissioning Guide included with each chevron order, or available at [support.carmanah.com](https://support.carmanah.com).



**NOTE**

Chevron warning signs will flash continuously by default using the Always On operating mode. The Chevron Configuration flash pattern settings will allow for programming sequential or synchronized flashing.

**NOTE**

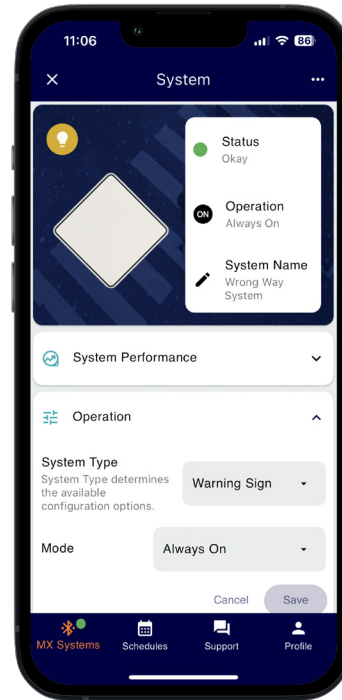
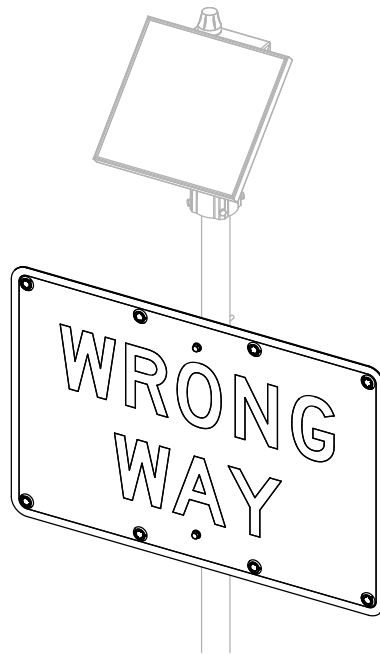
The Chevron Commissioning Guide must be followed for proper setup and operation.

## 5.7 Application 6 – WWD-MX Wrong-Way Driver Warning Signs

For wrong-way driver warning applications, follow the steps below for each system:

### Continuous Flashing

1. Pair with the system as per [Section 2.2](#).
2. If applicable, link systems together for flash synchronization. See [Section 3.6](#).

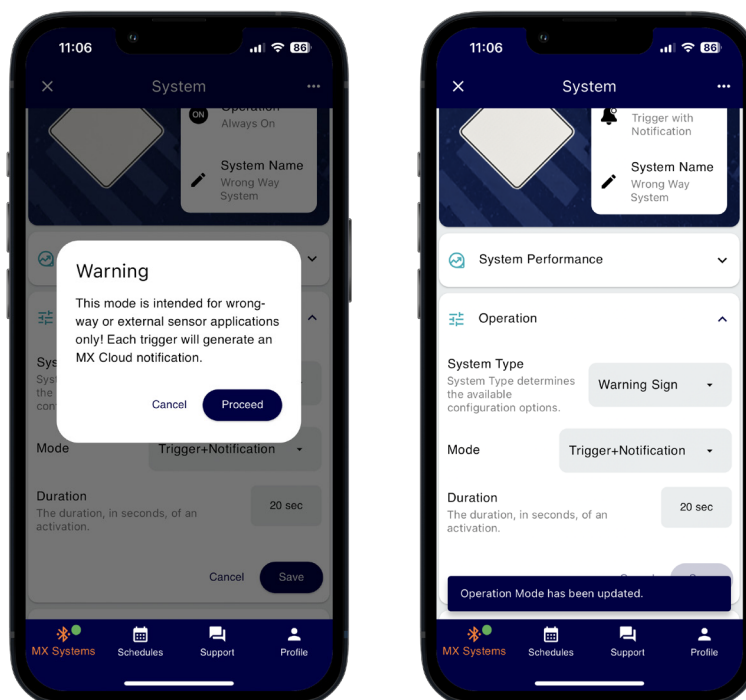
**NOTE**

Wrong-way LED signs will flash continuously by default using the Always On operating mode.



## Radar Triggered

1. Pair with the system as per [Section 2.2](#).
2. Open the Operation drop-down menu. Set the operation mode to Trigger with Notification.
3. Set duration accordingly for the application. The default flash duration is 20 seconds.
4. Tap Done and then Save to complete
5. If applicable, link systems together for flash synchronization. See [Section 3.6](#).
6. Ensure the radar has been programmed accordingly. Refer to the appropriate **LEVEL 4** install guide for more information.



### NOTE

Trigger with Notification will send an SMS and/or email alert after a trigger has occurred, such as a wrong-way vehicle detection, to all opted-in users on the MX Cloud account. Ensure you have opted-in to notifications from within MX Cloud. Requires an active MX Plus/Pro subscription. Contact Carmanah for more information.

### NOTE

Radar is fully adjustable to help eliminate unwanted or false activations, such as: pan and tilt, minimum detectable speed, maximum detectable speed, detection sensitivity and range.

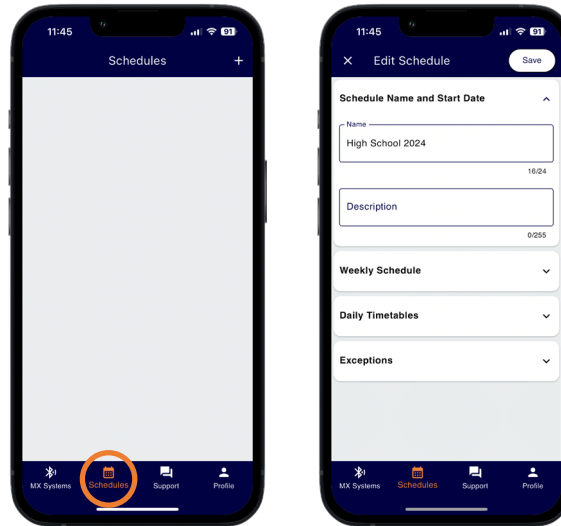
### NOTE

Set advanced systems linked to radar equipped system to Trigger/Standby.

## 6.0 Schedules

### 6.1 Schedules Screen

The Schedules screen is accessed by tapping on the Schedules button in the bottom dock and provides access to create and edit schedules, primarily for school zone systems. Schedules can be created at any time without requiring on-site access to a system. Schedules are saved locally to your mobile device.

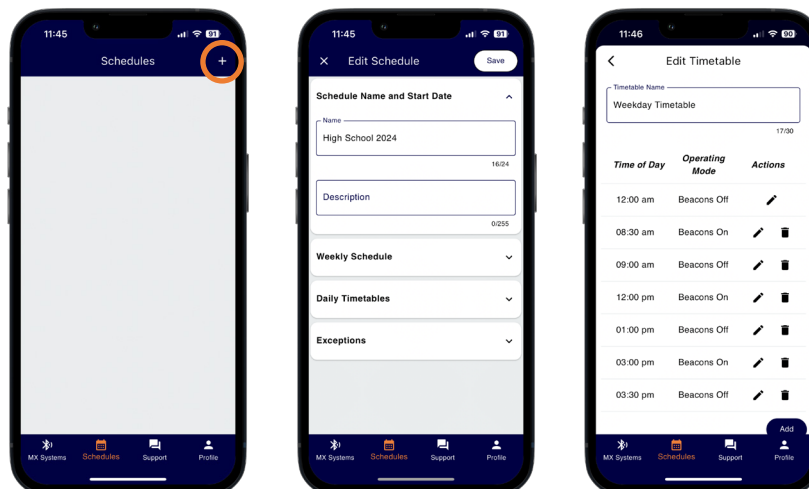


#### NOTE

Throughout [Section 6](#) an event is either Beacons On or Beacons Off (unless pedestrian triggered). Most application will not use pedestrian activation when scheduling.

### Creating a Schedule

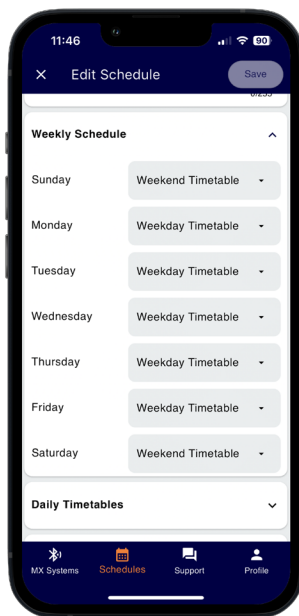
Tap on the “create” button (+) to generate a new schedule. Enter a name and description for your schedule. The schedule will automatically assign a sample set of timetables and populate into a weekly schedule. The sample timetables and weekly schedule can be edited, or new timetables may be created. Schedules or timetables can be copied by tapping on the vertical ellipsis and then Copy.



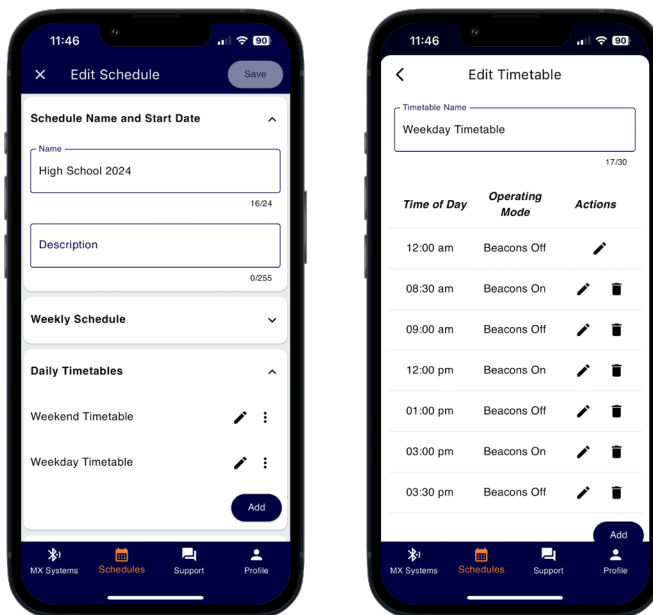
## Weekly Schedule

The weekly schedule runs from Sunday to Saturday with each day assignable to a timetable. Build the schedule for the typical weekly events throughout the year. For any days that fall outside of this schedule, such as an early release day that occurs each month, create a separate timetable to supersede this schedule for those dates. This will be used under the Exceptions function.

Each schedule will automatically be populated with sample weekday and weekend timetables.



Timetables can be edited, deleted, copied or replaced. Tap on the loaded timetable to change to a different available timetable or add a new timetable. See Daily Timetables for more information.



## Daily Timetables

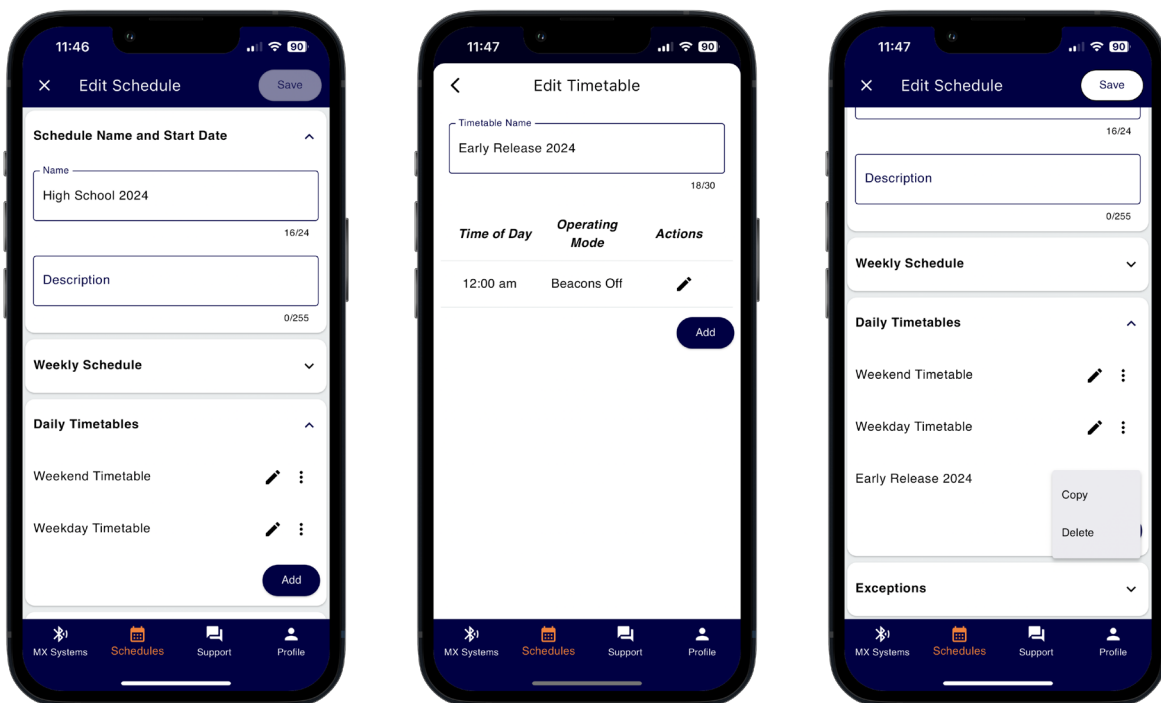
Timetables are a collection of events over a 24-hour period. Events are periods when the system's beacon(s) are either on or off (unless pedestrian activated).

The sample set of daily timetables will populate as follows:

- Weekday Timetable:
  - 8:30 – 9:00 AM (beacons on)
  - 12:00 – 1:00 PM (beacons on)
  - 3:00 – 3:30 PM (beacons on)
- Weekend Timetable – beacons off all day unless triggered

In the Daily Timetables drop-down menu, you have the following options:

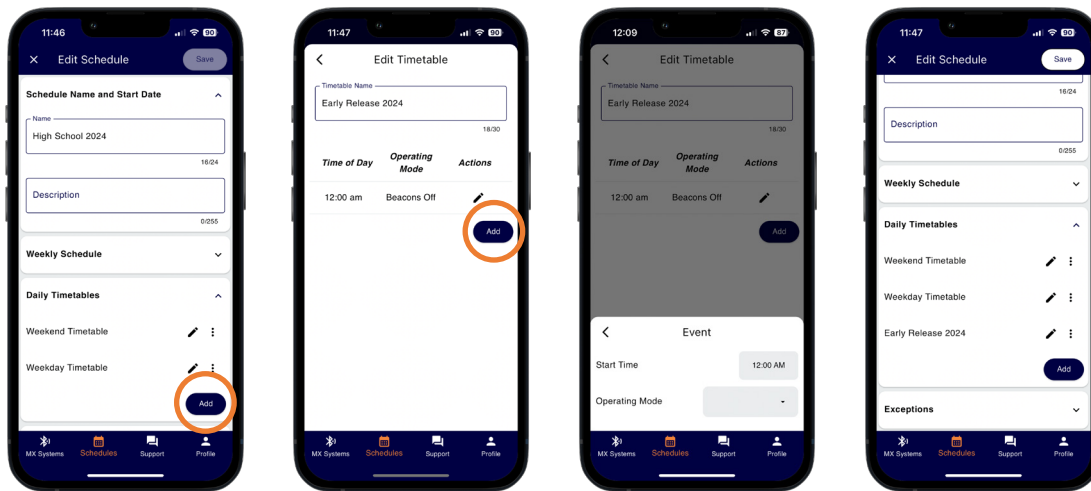
1. Add a new timetable
2. Edit an existing timetable
3. Copy a timetable
4. Delete a timetable



## Add Timetable and Events

To add a timetable, follow the steps below:

1. Tap on the Add button.
2. Rename the timetable.
3. Add events as required. Tap on the Add button to add an event:
  - a. Tap on the start time and select the desired time. Select AM or PM and then tap OK.
  - b. Tap on the operating mode to the right and select Beacons On/Off based on your application.
4. Once complete, tap on the left chevron button in the upper left to save.

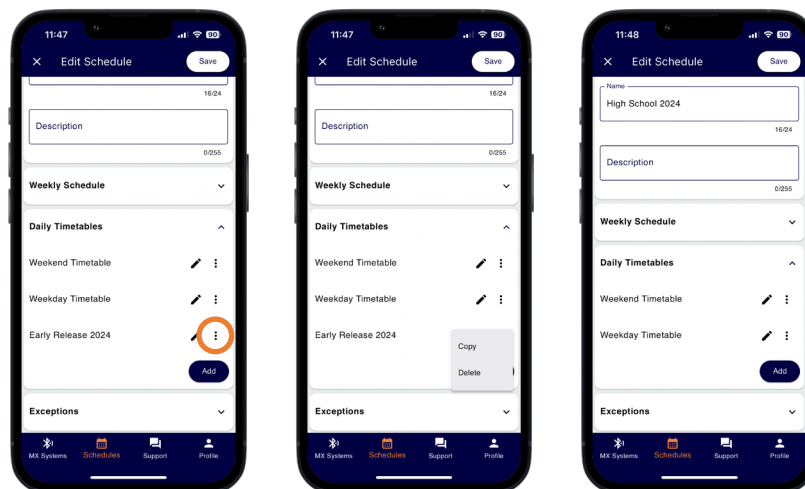


### NOTE

The first event of the day will default to Beacons Off at 12:00 AM. If this is not correct for your application, simply tap on the edit button to adjust the operating mode and time as required.

## Delete Schedule/Timetable/Event/Exception

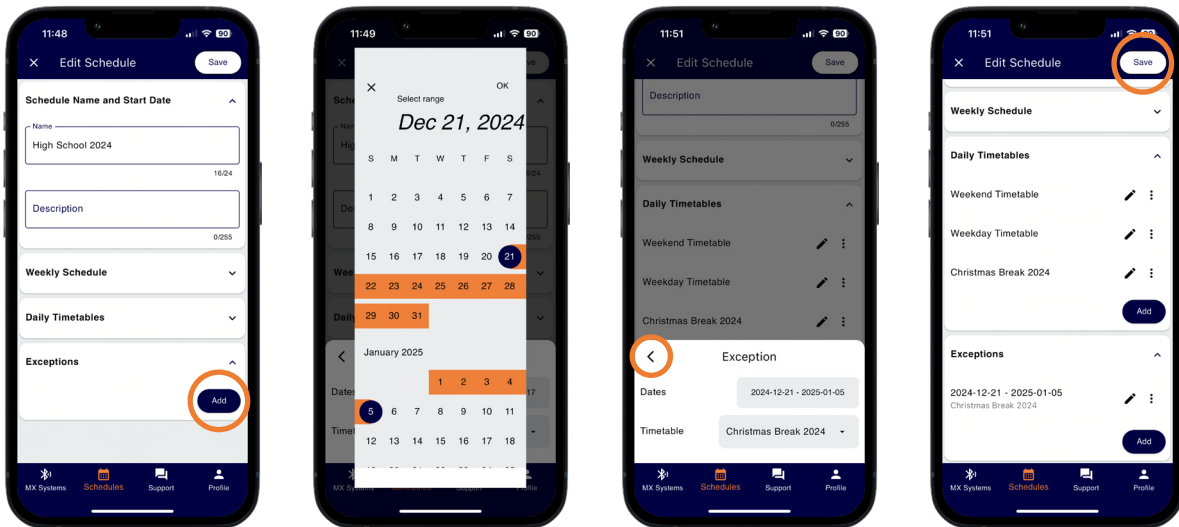
To delete a schedule/timetable/event/exception, tap on the vertical ellipsis and then tap Delete.



## Exceptions

Exceptions override the existing day's timetable on the date(s) chosen for the exception. They differ from schedules as they are date-based instead of day-of-the-week based. While an exception is active, the system will follow the new timetable chosen.

1. Tap on the Add button.
2. Tap on the date range and choose a start/end date. Tap OK when complete.
  - a. If your exception is for one day only choose the same date twice.
3. Tap on the empty timetable and choose the new timetable for the date(s) chosen.
4. Once complete, tap on the left chevron button in the upper left to save.
5. Tap Save to complete.



In the example above, the *Christmas Break 2024 (Beacons Off)* timetable will be active between December 21, 2024, and January 5, 2025. In this instance the timetable sets the beacon(s) off all day during this period. On January 6, 2025, the system will resume its normal weekly schedule.

**NOTE** Exceptions can be used to run different timetables, such as early release days or holidays.


**NOTE** Tap on the edit button to modify an existing exception. Only one exception per date range can be applied. Any edits are saved locally until you upload the schedule to the system.

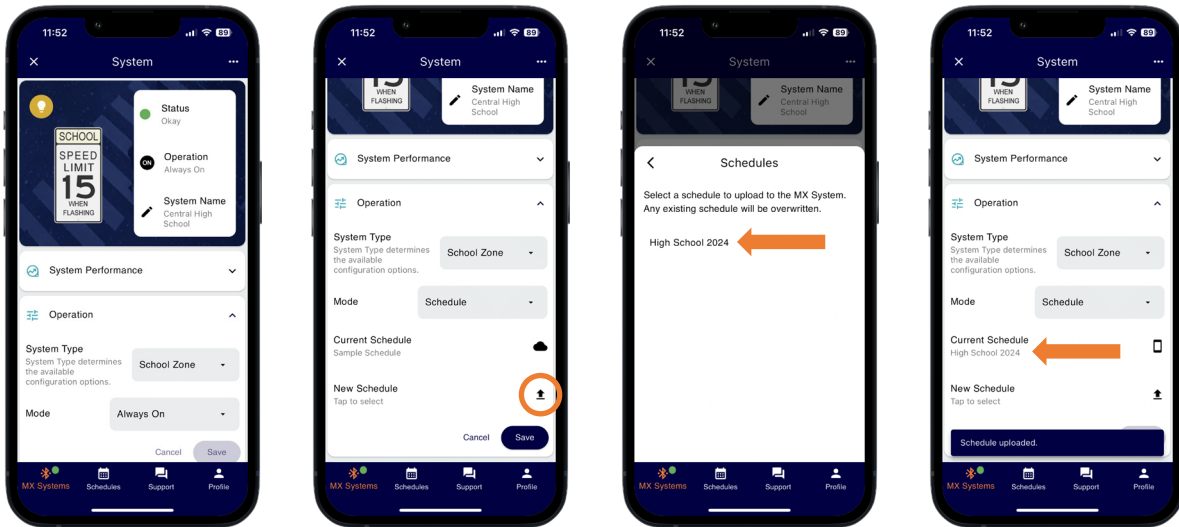
## 6.2 Uploading Schedule To System

**NOTE**

Any changes made to your schedule will remain local on your mobile device until you upload to a system.

To upload a schedule to a system, follow the steps below:

1. Tap on the Operation drop-down menu.
2. Change the operation mode to Schedule.
3. Tap on the “upload” button () next to New System.
4. Choose the appropriate schedule from the list.
5. Tap on Save to upload. The schedule will now show under Current Schedule.

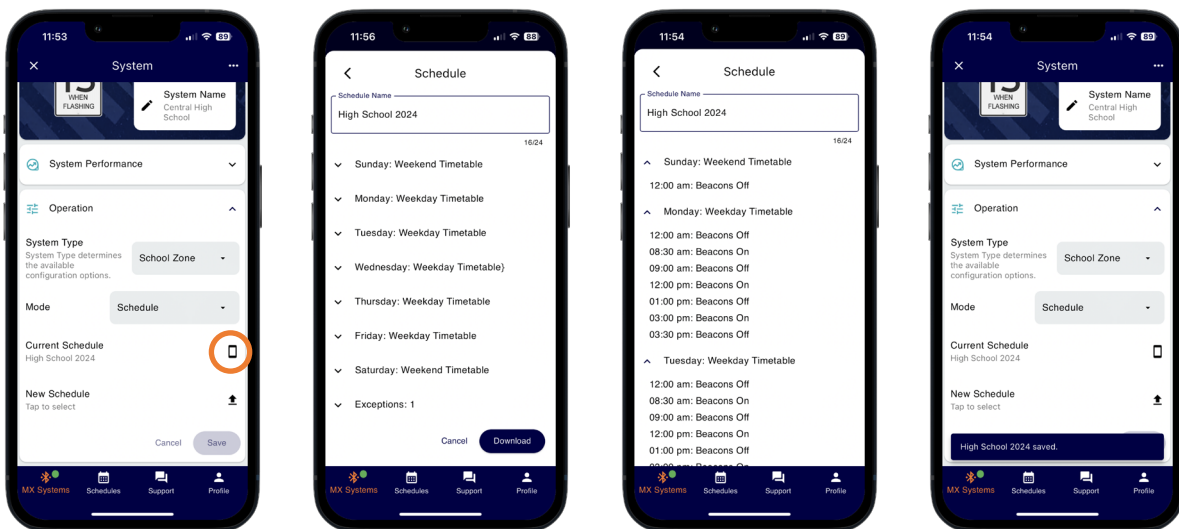

**NOTE**

Check the System Time to ensure it is accurate under the System Performance drop-down. Refresh the screen by swiping down to load the latest parameters. If require, perform a soft reboot to have the system reacquire new GPS date/time settings (see [Section 3.3](#)).

## 6.3 Downloading Schedule From System

To download a schedule from a system to your mobile device, follow the steps below:

1. Tap on the Operation drop-down menu.
2. Change the operation mode to Schedule if not already done.
3. Tap on the button (☐ or ☁) next to Current System.
4. Review the schedule currently uploaded to the system as needed.
5. Tap the Download button to save to your mobile device. This schedule will now appear in the Schedules screen.


**NOTE**

There will be a “mobile device” icon (☐) for locally programmed or “cloud” icon (☁) for remotely programmed schedule.

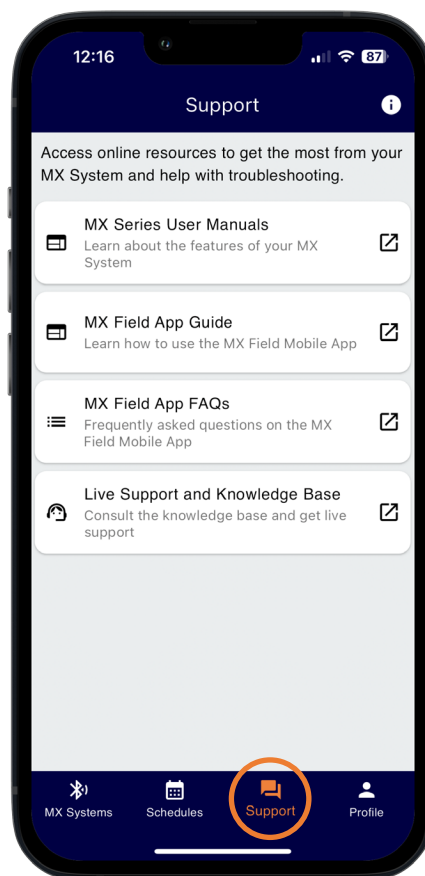


## 7.0 Support

### 7.1 Support Screen

The Support screen is accessed by tapping on the Support button in the bottom dock and contains access to the following:

- MX Series User Manuals
- MX Field App Guide (this guide)
- MX Field App FAQs
- Live Support and Knowledge Base
- MX Field App Version – tap on the “information icon” (i) to check the app version installed

**NOTE**

The items above contain links to the Carmanah website and will require an Internet connection.

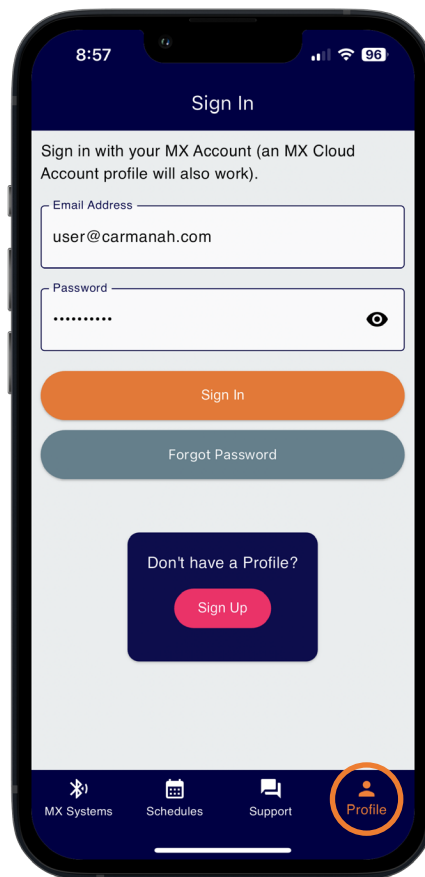
## 8.0 Profile

### 8.1 Profile Screen

The Profile screen is accessed by tapping on the Profile button in the bottom dock and contains access to the following:

#### When Signed Out

- Sign Up – if you have not yet created a profile, tap the Sign Up button to create your own Profile.
- Sign In – sign in with your own Profile.
- Forgot Password – use your email address to receive instructions to reset your password.

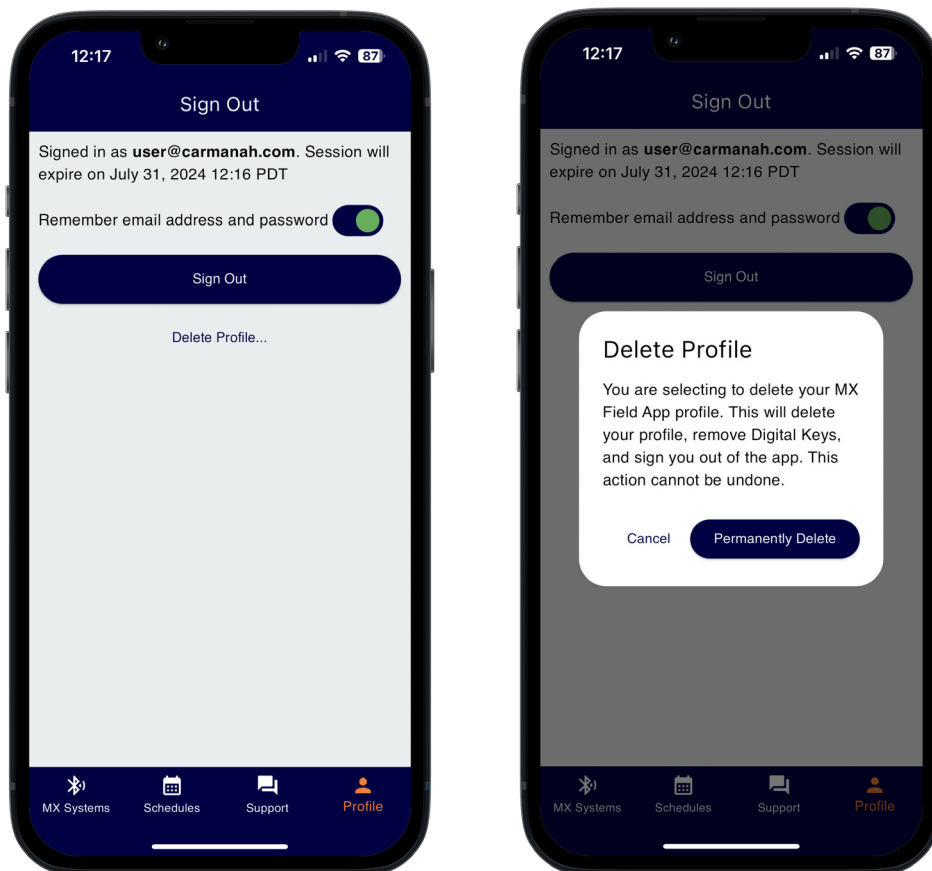
**NOTE**

A cellular or Wi-Fi connection is required to sign into your Profile. Ensure that your session is not set to expire soon if you are using a mobile device on-site without an Internet connection. Using a mobile hotspot is useful in such situations as required.

## When Signed In

- Shows your Profile's email address and when your session will expire. Your session will last for 14 days and then requires signing in again. See [Section 2.1](#). Upon signing in again the app will download the digital key for any system that you have paired with previously. This requires an Internet connection.
- Ability to retain your email and password the next time you sign in.
- Sign out.
- Delete Profile.

Tapping on Delete Profile will give you the option to delete your Profile. Tap on Permanently Delete to complete this process and take you back to the Sign In screen.





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