

**NOTE**

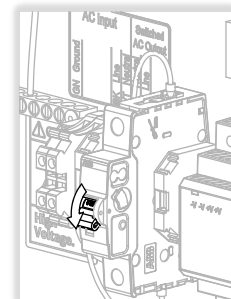
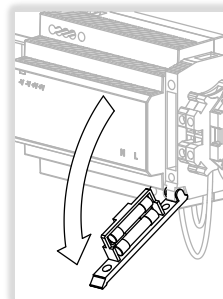
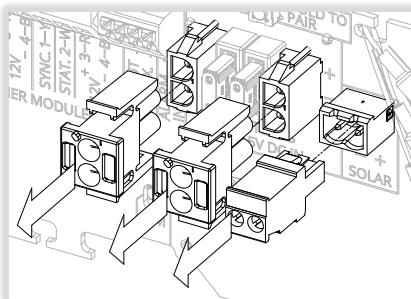
This document covers instructions for MX 100/200/300/400 systems. Power module circuit boards are available in solar and AC versions. These should only be installed in the correct system power type. Solar versions have two fuses while AC versions have one fuse on the circuit board.

**NOTE**

Power modules replaced under warranty will automatically have their warranty and subscription transferred from the original module to the replacement. Module warranty and subscription status can be viewed by signing into MX Cloud. Contact Carmanah to have your MX Plus or MX Pro subscription, if applicable, transferred to the new power module for non-warranty replacements.

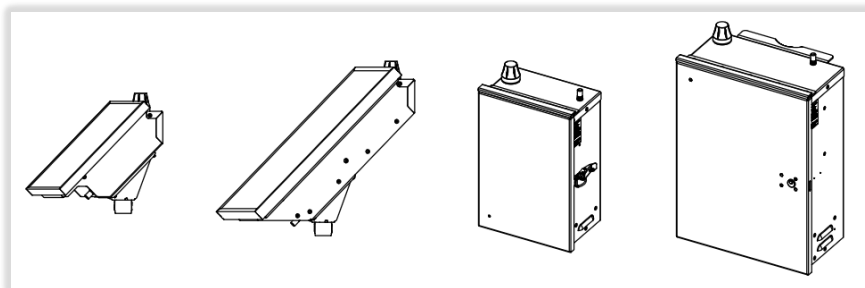
1. Disconnect power to system:

- Solar only: disconnect solar connector and then battery connector(s).
- MX 300 AC Cabinet Module: open fuse holder.
- MX 400 AC Cabinet Module: turn off breaker.



2. See the following sections for the power module circuit board being replaced:

- 1.0 – MX 100/200 Solar Power Module
- 1.1 – MX 300 Solar/AC Cabinet Module
- 1.2 – MX 400 Solar/AC Cabinet Module



MX 100

MX 200

MX 300

MX 400

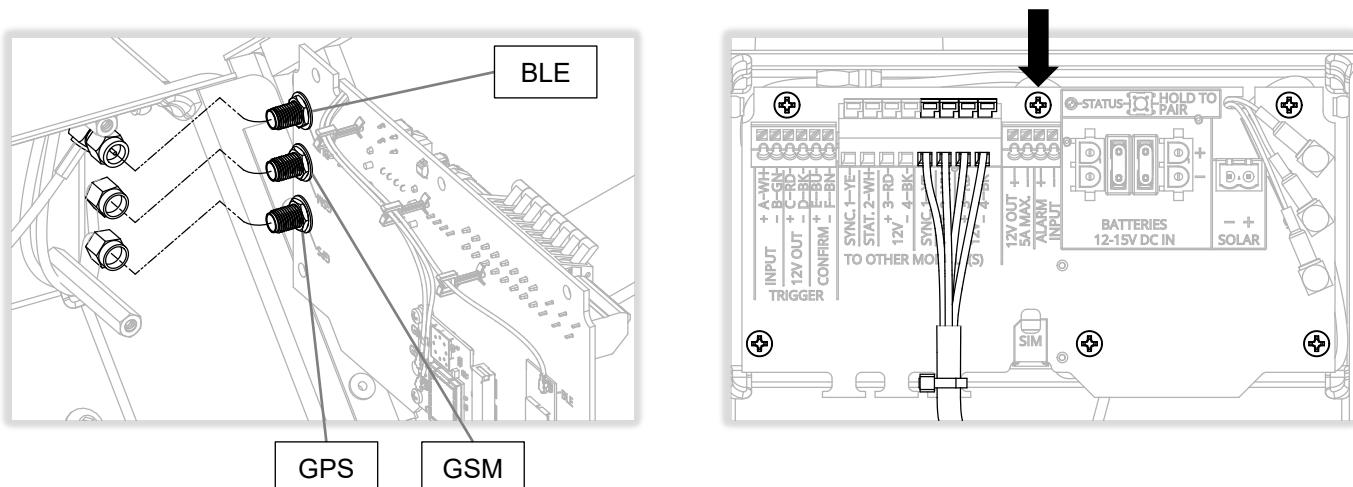


## 1.0 MX 100/200 Circuit Board Replacement

1. Locate product label on outside of MX 100/200 chassis. Clean and dry area then apply new serial number label overtop existing product label location. Do not rub label as ink may smear.
2. Remove battery(s) from MX 100/200 system and disconnect all wires from circuit board. Take note of color and location.
3. Cut any cable ties securing cables to circuit board.
4. Remove six screws securing circuit board to bracket and flip board over. Plug hole going down the pole to prevent screws from falling out.

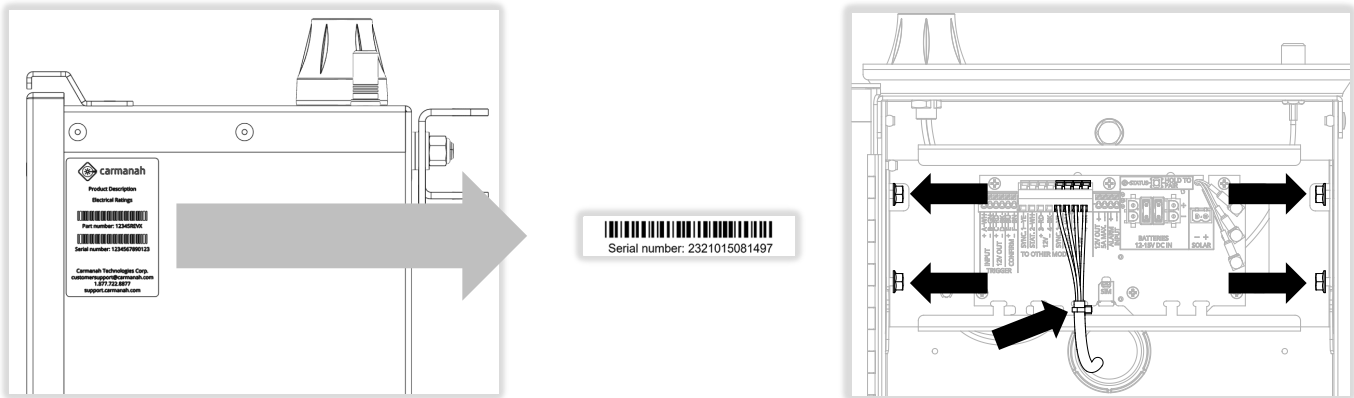


5. Disconnect three SMA antenna connectors and remove circuit board from system.
6. Reconnect three antenna SMA connectors to replacement circuit board as shown following wire labels:
  - GPS
  - GSM
  - BLE
7. Install replacement circuit board onto standoffs and secure with six screws removed from step 4. Thread top middle screw on first.
8. Reconnect all wires disconnected in step 2.
9. Replace any cable ties that were cut.
10. Reinstall battery(s) into MX 100/200 system.
11. Go to Section 2.0.

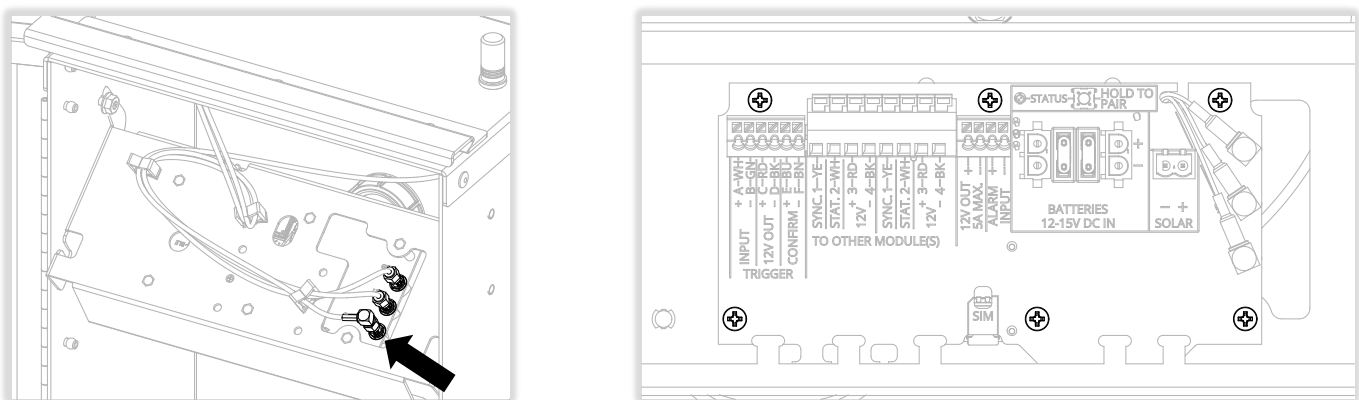


## 1.1 MX 300 Circuit Board Replacement

1. Locate product label on outside of MX 300 cabinet. Clean and dry area then apply new serial number label overtop existing product label location. Do not rub label as ink may smear.
2. Disconnect all wires from circuit board. Take note of color and location.
3. Cut any cable ties securing cables to circuit board.
4. Loosen four nuts securing circuit board bracket by a few turns.
5. Swing bracket down into service position shown below.

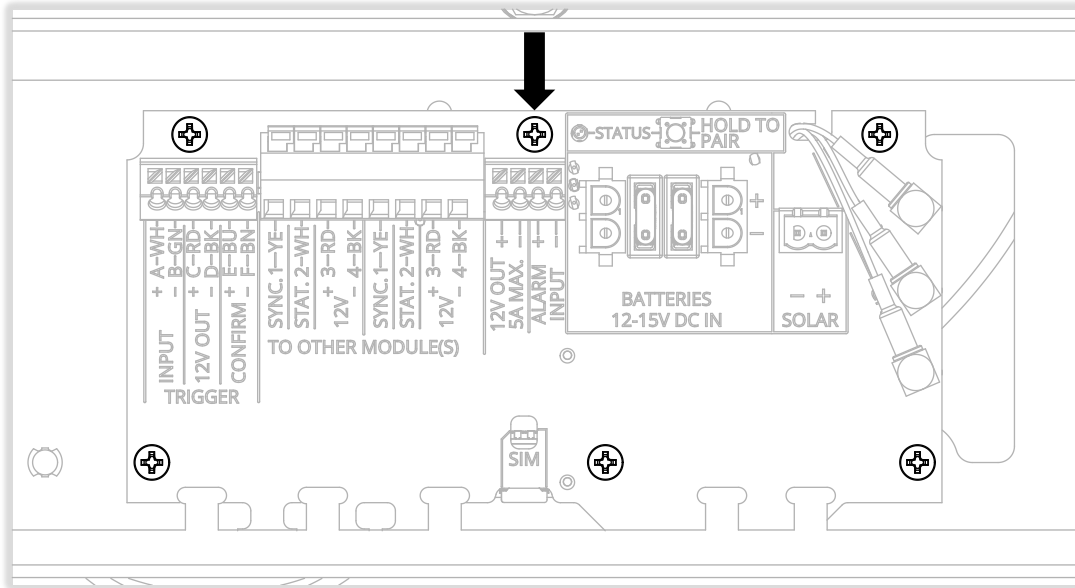


6. Remove three SMA antenna connectors from circuit board.
7. Swing bracket back into installed orientation.
8. Remove six screws securing circuit board to bracket.
9. Remove circuit board from system.

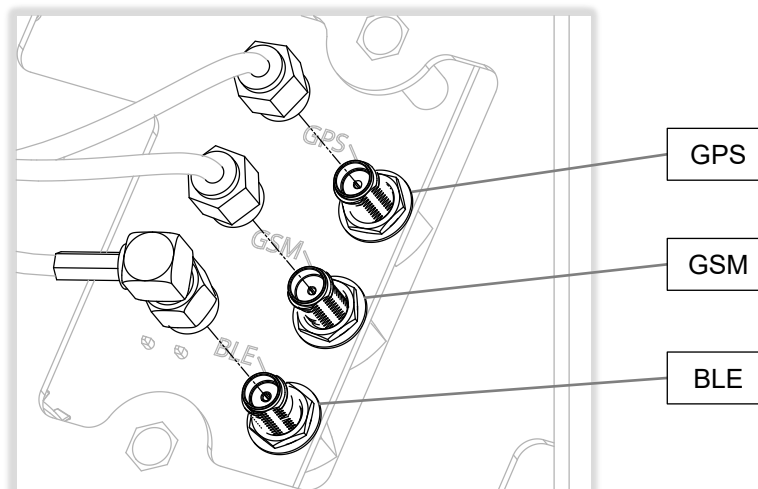




10. Install replacement circuit board onto bracket.
11. Secure with six screws removed from step 8. Thread top middle screw on first.



12. Swing bracket down into service position again.
13. Reconnect three antenna SMA connectors to replacement circuit board as shown following wire labels:
  - GPS
  - GSM
  - BLE
14. Swing bracket back into installed orientation.
15. Tighten four nuts loosened in step 4 to secure bracket and reconnect all wires.
16. Replace any cable ties that were cut.
17. Go to Section 2.0.



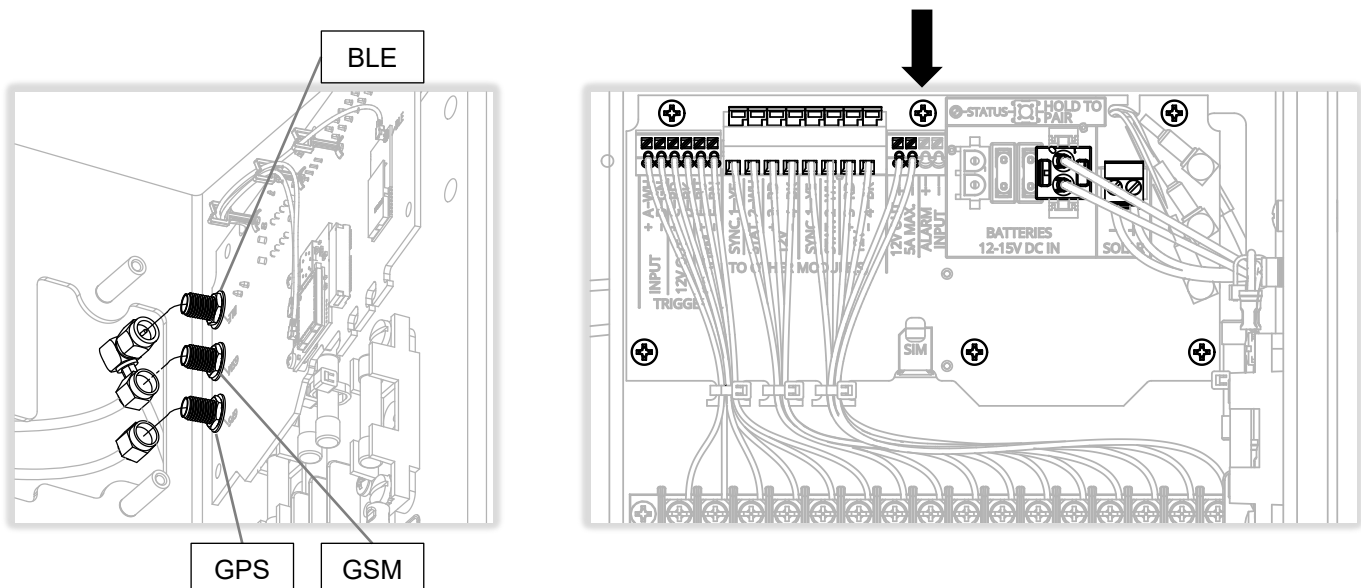


## 1.2 MX 400 Circuit Board Replacement

1. Locate product label on outside of MX 400 cabinet. Clean and dry area then apply new serial number label overtop existing product label location. Do not rub label as ink may smear.
2. Disconnect all wires from circuit board. Take note of color and location.
3. Cut any cable ties securing cables to circuit board.
4. Remove six screws securing circuit board to bracket.

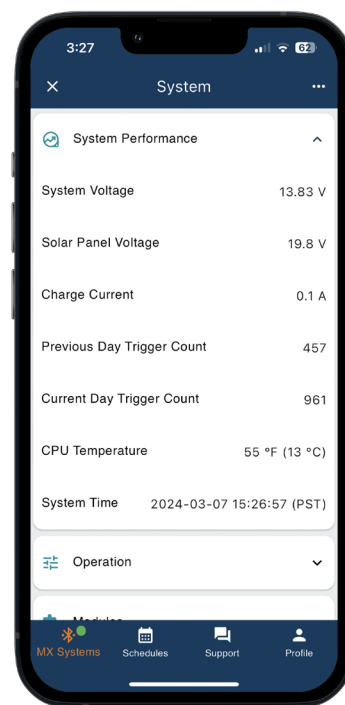
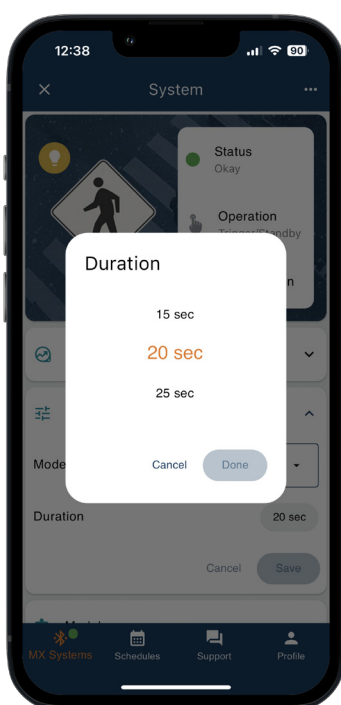
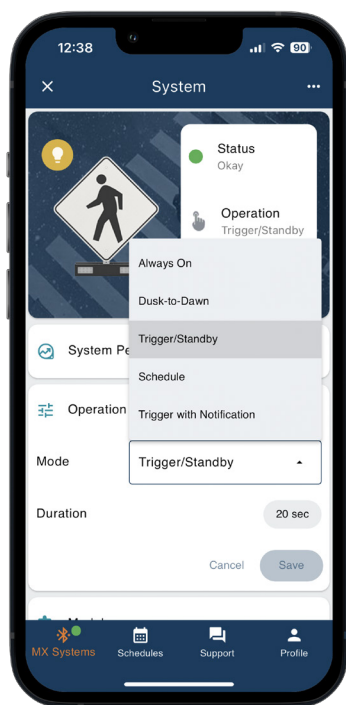


5. Disconnect three SMA antenna connectors from circuit board.
6. Reconnect three antenna SMA connectors to replacement circuit board as shown following wire labels:
  - GPS
  - GSM
  - BLE
7. Install replacement circuit board onto bracket and secure with six screws removed from step 4. Thread top middle screw on first.
8. Reconnect all wires disconnected in step 2, respecting their original termination locations.
9. Replace any cable ties that were cut.
10. Go to Section 2.0.



## 2.0 Final Connections and System Test

1. Reconnect power to system.
2. Open MX Field App to adjust settings on replacement circuit board as required, such as:
  - Change operation mode.
  - Adjust trigger duration.
  - Upload a schedule.
  - Link system with others at crosswalk.
3. Ensure system is reporting in properly. See MX Field App guide for more information.
  - System is charging (solar only).
  - Acquires a valid system time through GPS (System Performance drop-down or MX Power Module screen).
  - Acquires a valid latitude and longitude through GPS (MX Power Module screen).


**NOTE**

Once the new power module has been installed it will begin to report into MX Cloud. Authorized MX Cloud users can contact Carmanah to have the old power module removed from your MX Cloud account if this is a not a warranty replacement.