



Release Notes Cypher III MY20/21/22/23 Cypher III MBB REV 34, BMU REV 13 and BMS REV 24

Firmware Update via Cellular Over-the-Air Bug Fixes and Maintenance

Owners with MBB versions of Rev 33 and older:

This update to Rev 34 must be completed via the Zero Motorcycles NextGen App or Dealer visit.

Once MBB is running Rev 34, OTA and NEXTGEN app updates will work successfully.

The dash will not show the currently installed MBB version however the NextGen App will display this information.

Overall Problem Description

Older versions of the MBB software have a bug which can cause wrong ECU ID mapping, which is used to identify the hardware to be upgraded. This will cause incorrect firmware to be requested and the MBB to reject the received image. Depending on existing firmware & hardware on a vehicle, it is possible that the incorrect firmware could be installed on a system, causing it to fail and require a service technician to repair. Additional issues were solved where chip set images were not getting handled correctly. Depending on the version of MBB (both hardware and firmware), different behaviors could be experienced by the end user.

Detailed changes:

Cellular based firmware updates failures caused by incorrect data after hibernation have been resolved. Duplicate firmware images via cellular update causing increased download times and failures have been resolved.

Power Tank operation improvements

Improvements to the interaction between Power Tanks and main power packs. Primarily the changes are around charging and discharging, where the Power Tank should remain near the same SOC as the main power pack to behave as an integrated system, rather than switching from one to the other during operation.

Detailed changes:

Resolved an issue with Power Tank firmware update failures caused by mis-mapped ECU assignments.
Resolved an issue where a Power Tank could assert controller faults at LVC (Low Voltage Cutoff)
Resolved an issue where Power Tank charging can appear to become stuck at 98% for extended periods of time.
Resolved an issue with charging balancing issues between Power Tank and main power pack.
Resolved an issue with Power Tank overcurrent discharge fault at 6% SOC.

Improvements on SOC

The reported capacity estimation in the Cypher III BMS SOC algorithm has been improved. Additional general improvements were made on the SOC algorithm to better model overall battery characteristics based on data collection analysis.

Detailed changes:

- Resolved jumps in OCV estimation while riding.
- Corrections to SOC tracking to 110%
- Slope correction data for MPPUs in vehicle applications.
- Addressed abrupt changes in displayed SOC on select power pack applications.
- Resolved an issue with Regen surging when at high SOC.
- Resolved an issue with Regen being applied later than expected at >85% SOC.

Charging system improvements when approaching full charge or desired charge target

Improvements in overall charging behavior. Resolved an issue where charge targets could be violated after a hibernation cycle and/or key cycle due to mismatch between what has been requested and what is measured at various SOC levels.

Detailed changes:

- Implement new charge limits as outlined by data analysis.
- Increase BMU ideal compacity.
- Increase of BMU allowed charge rate for various SOC states.
- BMU charge target algorithm improvements to reduce long charge times at high SOC.
- Extended Range Charging does not override charge target.
- Resolved an issue where Charge Target values not properly adhered to after a key cycle.

Improvements in fault handling

Detailed changes

- Resolved BMU Temp sensor fault at -15C.
- Implement forced socket unlock under persistent fault condition.
- Resolved an issue where cell large imbalance causes contactor oscillations.
- Resolved an issue where MIL light clears after just one hibernation cycle.
- Resolved an issue with bulb out detection failures.

Release Notes Cypher II MY17/18/19/20/21/22/23 Cypher II MBB Rev 38 BMS Rev 45

MBB sending ECU packet with wrong firmware part number for BMS.

Resolving an issue with the firmware reporting the incorrect part number for specific chip set combinations.