

SkyBox: True Hybrid Energy Management

The firmware which operates SkyBox is regularly updated and available for download from FTP site, or directly from OutBack Power.

SkyBox is now generally available to the public. However, there are known issues in the firmware. Some firmware features may not be fully implemented at this time, and their operation may change in the future. All specifications are subject to change without notice.

This document captures all known issues in the latest firmware, version 1.5.x. While it may not be comprehensive, it does communicate all issues observed prior to its publication.

Please contact OutBack Power with any additional observations.

Revised 22nd July 2020.

In this firmware revision (1.5.11)

1. Added support for SkyBox's successful validation as a NRTL-Tested UL 1741 Power Control System (PCS) inverter.
 - a. SkyBox now fully supports requirements laid out in the PCS amendment to 1741.
 - b. SkyBox is classified as a NEM-eligible device with demonstrated capability to prevent and limit export. Specifically, SkyBox supports export-only (so charging from only solar), import-only (non-export), AND no-exchange.
2. Added built-in support for secure utility communications using the IEEE 2030.5 communications protocol defined in the SunSpec CSIP (Common Smart Inverter Profile).
3. Added ability to export battery power to grid via SunSpec CSIP.
4. Updated SimpliPhi battery configuration settings for both 3.5 and 3.8kWh products.
5. Added Lithium Custom, Discover AES 48V 6.65kWh, Fortress eVault 18.5kWh, and KiloVault HXL 1.8kWh.
6. Added total amp hours and current limits calculation based on battery number of strings.
7. Modified Time of Use so it can carry over end of year scheduling into the new year.
8. Fixed an AC Coupling-related bug that occasionally caused unintended faults due to quick ramping of power while grid was available, but not connected.
9. Bounded temperature compensation voltage by LBCO/HBCO and improved operating limits.

10. Fixed a bug that could leave time on the Absorb timer after hitting HBCO, causing a loop condition.
11. Fixed an issue that would cause AGS to not stop the generator on manual stop.
12. Fixed an issue that disabled the AGS function after initiating a manual generator start-stop cycle.
13. Fixed a bug that would reduce the time given to the AGS start timer.
14. Improved SkyBox resilience to handle large step changes in power factor.
15. Fixed a bug that would validate and correct re-bulk voltage against refloat when float charge was disabled.
16. Removed the validation and correction between equalize, and other voltage targets. It is unlikely SkyBoxes are used to provide an equalize charge as most FLA batteries prefer an equalize voltage well above 60V.
17. Fixed a bug that would cancel equalize charge early.
18. Fixed a bug that resulted in resetting extended configuration properties to default values when re-running the setup wizard.
19. Improved grid synchronization functionality.
20. Fixed a bug in a UI message that was reporting **Grid Good** when it should have been **Gen Good**.
21. Increased the size of reserved memory to better recover from UI fault conditions. Stopped occurrence of nuisance **Low RAM** messages.
22. Added the ability to change the owner and installer password by substituting the administrator account password.
23. Fixed a bug that would leave loads unsupported if grid loss occurred during a battery recovery cycle in Maximum Independence mode.
24. Added release notes to the Firmware tab.
25. Addresses an issue with grid voltage that could occasionally cause faults while operating the Volt/VAr function during grid low/high voltage events. These faults required manual intervention/reset to resume operation.
26. Fixed a bug that was not setting the refloat voltage correctly.
27. Fixed a bug that could leave the system not fully shut down prior to updating.
28. Fixed a bug in AGS quiet time that would not carry over midnight.
29. Fixed other minor bugs.

Known issues in this firmware revision (1.5.11)

1. Stacking and AC Coupling are mutually exclusive at this time.
2. Peak-shaving is not fully supported at this time. Enabling the Demand Cap functionality disables Time of Use functionality. Potentially, other operating modes are either not functioning or not fully supported at this time.

3. On-grid to off-grid transition may be as slow as 200ms.
4. Off-grid, when solar power is available, SkyBox uses PV to charge batteries. It transfers generator power to loads only. In this situation, the battery will charge from PV only. When solar power is not available, the generator will supply power to both loads and battery charging. A minimum of 500W load is required to begin charging batteries from generator when no PV is present.

About OutBack Power

OutBack Power is a leader in advanced energy conversion technology. OutBack products include true sine wave inverter/chargers, maximum power point tracking charge controllers, and system communication components, as well as circuit breakers, batteries, accessories, and assembled systems.

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Other

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