

CEM60 Firmware Upgrade History

V20140115 **Beta Testing** (main board)

V20140214 **Beta Testing** (R.A., DEC motor control boards, Hand Controller)

V20140423 **Initial release** (HC, main board, R.A. and DEC boards)

V20140526 Firmware upgrade for main board, R.A. and DEC board

V20140527 Firmware upgrade for HC

- Improvement of EC version guiding
- Fixed the bug that may cause mount stopping tracking randomly;
- Fixed incorrect moving speed of 1x and 2x;
- Fixed the bug that will cause PEC playback not working properly;
- Added multi-language interface of HC, Simplified Chinese added;
- Other improvements.

V20140720 Firmware upgrade for main board, R.A. and DEC board

V20140721 Firmware upgrade for HC

New features:

1. Coordinates auto-saving feature added. If the power is lost by accident while mount is tracking, the mount will restore its coordinates when the power is back. It does not work while the mount is slewing.
2. Set Zero Position function added. Now you can manually set the mount zero position using hand controller. Note: The zero position has to be reset after firmware updating, or if the mount losing its power during slewing.
3. GPS will auto refresh every 6 minutes.

Improvements:

- Greatly optimize the size and speed of hand controller firmware.
- Number input module of hand controller has been rewritten.
- Auto-guiding in both R.A. and DEC axes has been improved.
- The algorithm to calculate the position of pole star has been further improved.
- The algorithm to calculate the zero position has been improved.
- Fixed the error that the mount sometime may slew to an incorrect position of a star
- Fixed the display error after mount parked successfully
- Other improvements

V20140825 Firmware upgrade for HC, main board, R.A. and DEC board

Improvements:

- Improved tracking performance of EC model.
- Improved guiding performance.
- Improved the algorithm of Two Star Polar Alignment.
- Using the latest (UCAC4) catalog data for calculating position of Polaris and Sigma Oct.
- Optimize the communication protocol.
- Fixed a bug of sometimes PEC recording will fail.
- Fixed a bug in calculating position of pole star.
- Other minor improvements.

Note:

- ASCOM driver 3.0 and iOptron Mount Control Center 3.0 require this firmware release or later.
- SkySafari Plus and Pro will not work with this firmware release until SkySafari updates its communication protocol with the iOptron mount.

V20140928 Firmware upgrade for HC, main board, R.A. and DEC board

Improvements:

- Tracking and guiding performance has been further improved.
- The EC encoder now works with guiding command seamlessly.
- PEC now works with guiding command seamlessly.
- Meridian Treatment has been improved:
 - The position limit passed meridian and behavior (stop or flip) could be set.
- **Note:**
 - (1) The position limit of CEM60 is: Northern Hemisphere 15 degrees, or 1 hour; Southern Hemisphere 10 degrees, or 40 minutes.
 - (2) The position limit of iEQ45 Pro is 30 degrees, or 2 hours.
- The pointing accuracy after meridian flip has been improved.
- Renamed Polar Align to Polar Iterate Align.
- Replaced Display Pole Error to Display Model Error:
 - If a Two Star Pole Alignment is performed, the Display Model Error will show the Pole Error only.
 - If a Multi-Star (3+ stars) Alignment is performed, the Display Model Error will show the Pole Error, Cone Error together. (**Note:** Multi-Star Alignment has been disabled temporarily for development. It will be enabled in the next release in very near future.)
- The maximum slew speed of iEQ45 Pro has been raised to 6 degree/sec now.
- Improved menu browsing.

Note:

- SkySafari 4 Plus and Pro now work with CEM60 and iEQ45 Pro.

V20141229 Firmware upgrade for HC, main board, R.A. and DEC board

Improvements:

- Communication between RA/DEC and main board has been improved.
- Meridian flip is smoother, and takes less time.
- Search Zero position is faster.

Bug Fixed:

- Sometime guiding via ST-4 Guide Port not working properly.
- Side of Pier not reported correctly. (Need to work with iOptron .NET ASCOM 3.2, which will be released soon).
- When enter the R.A. and DEC coordinates of an object, the DEC sign could not be changed.

V20150112 Firmware upgrade for HC

Updates:

- Comets update which includes those brightest comets in next 3 years.

V20150228 Firmware upgrade for main board and HC

New features:

- Now "Three Star Alignment" is available;
- Added "Clear Alignment Data" function;
- "View Model Error" will display linear RA error, linear DEC error, polar misalignment, non-perpendicular between OTA and DEC, and non-perpendicular between HA and DEC.

Improvements:

- When entering any star catalog menu, it will start where the last object has been chosen;
- Improved One Star Alignment;
- Improved RS233 port communication stability;
- The alignment model error and atmospheric refraction will be applied when go to an object using the hand controller;

- Speed and size were optimized for hand controller firmware.

Bug fixed:

- The hand controller may report incorrect position of Sigma Octantis in the southern hemisphere.

Note:

- The mount will need ASCOM 4.0 to work properly when connected to a computer.

V20150424 Firmware upgrade for RA motor control board and HC

Improvements:

- Greatly improved tracking performance of CEM60-EC;
- Improved Solar System Alignment;
- Greatly reduced waiting time of Polar Iterate Align.

Bug fixed:

- Sometimes One Star Alignment will not work properly;
- RA value of objects in Abell Catalog calculated incorrectly.

V20150505 Firmware upgrade for RA motor control board and HC

Bug fixed:

- Fixed GOTO accuracy after One Star Alignment;
- Corrected the wrong star coordinates in One Star Alignment;
- Fixed EC version tracking bug, especially if no encoder calibration is performed after R.A. firmware upgraded.