

## History of BLHeliSuite32 Revisions

### Changes in 32.7.0.9:

#### General:

- Added 32.7 hex file for:
  - RCTimer\_Ares\_60A
- Fixed: Com port device failures while write/verify flash. Mostly discovered with CH340 USB/UART (Arduino Nano) devices on specific systems (OS and/or USB hardware dependent).

### Changes in 32.7.0.8:

#### General:

- Added 32.7 hex file for:
  - FL1\_Megabolt
  - MAMBA\_F50PRO
  - ZeeZ60A
- OpenSSL update to v1.0.2u.
- Added ability to reload new hex files online.
- Added ESC verification feature to “ESC flash” tab.

### Changes in 32.7.0.7:

#### General:

- Added 32.7 hex file for:
  - Emax\_Formula\_65A
  - FLYWOO\_GOKU32\_PRO
  - Forward\_F3\_ESC
  - Furling32\_A
  - WINGTRA
- Fix: Added SBUS to valid input protocols.

#### External 4way-Interface (Arduino/Cleanflight/Betaflight/et al.):

- Added repeating of commands after ACK\_I\_UNKNOWN\_ERROR response to improve workaround for USB connection issues.

### Changes in 32.7.0.6:

#### General:

- Added 32.7 hex file for:
  - MAMBA\_F50\_PRO
  - MAMBA\_F60\_PRO
- Added the ability to edit and flash BLHeli\_32 rev. 32.71 beta.
- Improved reaction for ESC disconnection/reconnection from power supply.

### Changes in 32.7.0.5:

#### External 4way-Interface (Arduino):

- Fix “Arduino Mega unable to connect” by limiting DTR and RTS active for FC interfaces only.

### Changes in 32.7.0.4:

#### General:

- Added 32.7 hex file for:
  - Lumenier\_Razor\_4in1
  - Racerstar\_TaiChi\_ESC
- OpenSSL update to v1.0.2t.
- Fix in “ESC overview” for parameter last row: data not displayed.
- Improved flash handling for ESC.
- Setting DTR and RTS active whenever opening a com port.

## History of BLHeliSuite32 Revisions

### Changes in 32.7.0.3:

#### General:

- Added 32.7 hex file for:
  - FL1
  - FLYWOO\_GOKU406S\_PRO
  - Infinity\_40A

#### External 4way-Interface (Arduino):

- Bugfix for overly tight timeout, especially with regard to the use of the Arduino UNO.

### Changes in 32.7.0.2:

#### General:

- Improved detection of com port device removal from USB.
- Fixed wrong high DPI awareness setting.

### Changes in 32.7.0.1:

#### General:

- first modernized GUI version.
- Added new “ESC Flash” tab.
- Various fixes and improvements.
- Added approved 32.7 hex files.

### Changes in 32.7.0.0:

#### General:

- Added the ability to edit and flash BLHeli\_32 rev. 32.7 (No 32.7 hex files added yet).
- Added 32.6 hex file for:
  - CLRACING\_STSPINA
  - TRANSTECN\_50A
- OpenSSL update to v1.0.2s.
- Minor fixes and improvements.

### Changes in 32.6.1.6a:

#### General:

- Added 32.6 hex file for:
  - FL1\_F3
  - Forward\_L4\_ESC
  - HGLRC\_T-REX\_32bit\_ESC
  - LBEES\_43
  - RUSH\_MATRIX\_30A
  - SkyStars-40A-Slim-F3
  - Spedix\_Mini\_GS\_40F\_4IN1
  - TEKKO32\_F3

### Changes in 32.6.1.6:

#### General:

- Added 32.6 hex file for:
  - Aikon\_RD32\_45A\_4IN1\_6S\_V1\_0
  - BETAFPV-16A-32bit-V2\_0
  - MARS32\_100A
  - Spedix\_LS40A\_Slim\_V1\_1
- Minor fixes and improvements.

### Changes in 32.6.1.5:

#### External 4way-Interface (Ardupilot only):

## History of BLHeliSuite32 Revisions

- Added workaround fix for usage with interface “K” and “M”.
  - Removed warning about outdated interface version for interface “K”.
  - Removed heartbeat connection check for interface “K”.
  - Removed cmd\_DeviceInitFlash after “general error” answer on cmd\_DeviceReset for ESC presence checking for interface “K”, to speed up skipping of unused channels.
  - Excluded unsupported MSP\_BOXIDS command usage for interface “M”.
  - Added 2 sec timeout for cmd\_DeviceReset and cmd\_DeviceInitFlash to compensate excessive first ESC command delay after Connect.

### Changes in 32.6.1.4:

#### General:

- Minor visual improvements in “ESC Setup” page.
- Added capability to handle BLHeli\_32 rev. 32.64 Beta.
  - Programmable “Stall Protection”.

### Changes in 32.6.1.3:

#### General:

- Added 32.6 hex file for:
  - FLYWOO\_INI32\_PRO
  - MAMBA\_25A
  - MAMBA\_306
  - MAMBA\_506
  - T\_Motor\_F55A\_4IN1\_PRO\_V2\_F3
- Improved parameter layout revision check.
- Improved handling of “invalid” or “flash failed” marked ESC in “Read Setup” and “Check” procedures.

### Changes in 32.6.1.2:

#### General:

- Added 32.6 hex file for:
  - BETAFPV-16A-32bit-V1\_1
  - TEKKO32\_4in1
  - VIVA FPV\_45A\_BL32
- Improved handling of ESC write/verify errors by repeating block operations.
- Improved handling of ESC “Read Setup” and “Check” procedures.

### Changes in 32.6.1.1:

#### General:

- Added 32.6 hex file for:
  - ReadyToSky\_32
  - Spedix\_GS45A\_4IN1\_V1\_1
  - T\_Motor\_F45A\_4IN1\_V2
  - T\_Motor\_F55A\_4IN1\_PRO\_V2
  - XILO\_ESC

#### External 4way-Interface (Cleanflight/Betaflight/et al.):

- Added workaround for Betaflight VCP multiple of 64 byte read failure bug with F7 FC boards.
- Added basic compatibility verification of FC variants with Motor tab functions.
- Added Error handling for msp error sign (“|”) currently used by dRonin.

### Changes in 32.6.1.0:

#### General:

- Added 32.6 hex file for:
  - Aikon\_AK32\_4IN1\_55A\_6S\_V1\_0

## History of BLHeliSuite32 Revisions

### Changes in 32.6.0.9:

#### General:

- Added 32.6 hex file for:
  - iFlight-35A-BLHeli\_32
  - Neuron\_40
  - PYRO-32F3
- Added support for STM32G071 MCU.
- Added handling for falsely added BOM UTF-8 in external hex files.

#### External 4way-Interface (Arduino):

- Added STM32L431 and STM32G071 to device id match and increased timeout for flash erase.
- Increased 4way-if version number to rev20.0.0.3 to indicate changes. Please ensure to use Arduino/CF/BF interface versions which contains 4way-if code of rev20.0.0.3 or higher in order to connect to STM32L431 and STM32G071. (BF 3.56 and CF 2.50 contain 4way-if version 20.0.0.2)

### Changes in 32.6.0.8:

#### General:

- Added support for STM32L431 MCU (beta state).

#### External 4way-Interface (Cleanflight/Betaflight):

- Fixed connection issues (first ESCs sometimes missed).
- Added optional FC reboot on disconnect for F7 boards, to ensure reactivation of motor outputs.

### Changes in 32.6.0.7b:

#### General:

- Added 32.6 hex file for:
  - Crazepony\_35A\_BLHeli\_32
  - Duke\_35A\_BLHeli\_32
  - Furling32\_4in1\_F0
  - Furling32\_4in1
  - HSKRC\_35A\_BLHeli\_32
  - Makerfire\_35A\_BLHeli\_32
  - SMOOV\_30A

### Changes in 32.6.0.7a:

#### General:

- Added 32.6 hex file for:
  - AK32PIN\_4IN1\_6S\_25A
  - BETAFPV-16A-BLHeli\_32
  - Furling32\_Metal
  - GEPRC\_BL32\_4IN1
  - TEKKO32\_F3\_4in1
  - TTTRC\_BL32

### Changes in 32.6.0.7:

#### General:

- Added 32.6 hex file for:
  - Atom32\_35A
  - DALRC\_ENGINE\_PRO\_ESC
  - HTIRC\_Hummingbird\_32
  - Lumenier\_Razor32
  - Lumenier\_Razor\_Pro\_F3
  - R\_FlyFort
- Added 32.4 hex file for:
  - Atom32\_35A
  - HTIRC\_Hummingbird\_32

## History of BLHeliSuite32 Revisions

### Changes in 32.6.0.6:

#### General:

- Added 32.6 hex file for:
  - AK32PIN\_4IN1\_6S\_35A
  - Dake\_30A\_BLHeli\_32
  - Furling32\_Mini
  - HGLRC\_Forward\_ESC
  - TEKKO32\_F3\_Metal
  - TEKKO32\_F3\_Mini
- Added 32.4 hex file for:
  - Dake\_30A\_BLHeli\_32

#### External 4way-Interface (Arduino/Cleanflight/Betaflight):

- Bugfix for readout of BLHeli\_32 ESC, if BLHeli 8 bit is by chance mixed into arrangement.

### Changes in 32.6.0.5:

#### General:

- Added 32.6 hex file for:
  - ALIENTEK\_BLHeli32
  - iFlight\_BL32\_4IN1
  - iFlight\_BL32\_PRO
  - RDQ\_32\_Bit
  - T\_Motor\_F\_4IN1\_F3
- Added 32.4 hex file for:
  - ALIENTEK\_BLHeli32
  - iFlight\_BL32\_PRO

### Changes in 32.6.0.4:

#### General:

- Added 32.6 hex file for
  - Hobbywing\_XRotor\_BLHeli32
- Fixed bug: EConvert Error at start of the app, if Short date format is set to “dd-MMM-yy”.

### Changes in 32.6.0.3:

#### General:

- Added approved 32.6 hex files.
- Adapted different parameter default values for:
  - sFrESC\_80A
  - HAKRC\_E45A
  - HAKRC\_E50A
  - RF1

### Changes in 32.6.0.2:

#### External 4way-Interface (Arduino/Cleanflight/Betaflight):

- ESC connection handling optimized; fixes particular problem (connection for ESC#1 fails after "check" scanning succeeded & “Write Setup” needs to be done in single mode) with GD350 based ESC.
- Optimized parameter comparison between different firmware revisions and LED arrangements.
- Fixed bug in multiple flashing of different ESC-Brands in multi-ESC arrangements.

### Changes in 32.6.0.1:

## History of BLHeliSuite32 Revisions

### *General:*

- Added auto checking for updates of BLHeliSuite32.  
Feature is enabled by default for daily checking, but can be configured for other intervals or disabled (menu “Options”). Manually checking for updates is still possible in menu “?”.
- Fix of restoring the last selected screenshot path.
- Added BLHeli\_32 rev. 32.4 hex files for:
  - Airbot\_Wraith32\_Metal\_Rev1\_ST
  - AK324IN1PIN25A
  - AK324IN1PIN35A
  - Bardwell32
  - Crazepony\_30A\_BLHeli\_32
  - DALRC\_Rocket\_ESC
  - Emax\_6S\_STSPIN32F0\_V21
  - Furling32
  - FVT\_CloudPhoenix\_50A
  - FVT\_MachineDog\_20A
  - GetFPV
  - HAKRC\_45A
  - Makerfire\_30A\_BLHeli\_32

### *External 4way-Interface (Cleanflight/Betaflight):*

- Fixed small bug in reading MSP\_3D (no practical relevance).

### **Changes in 32.6.0.0:**

#### *General:*

- Added the ability to edit and flash BLHeli\_32 rev. 32.6 (No 32.6 hex files added yet).
- OpenSSL update to v1.0.2o.

### **Changes in 32.5.0.2:**

#### *General:*

- Minor visual changes in “ESC Setup” page.
- Fix for LED color assignment at FrESC\_80A.

### **Changes in 32.5.0.1:**

#### *General:*

- Disabled rev. 32.5 for flashing due to a compatibility issue.
- Minor visual changes in “ESC Setup” page.
- Minor fix: “Brake On Stop” parameter handling. (Disabled showing of brake force percentage for ESC, which are not capable of nondamped mode).
- Added hint on transformation of “Motor Direction” between different revisions.

### **Changes in 32.5.0.0:**

#### *General:*

- Added the ability to edit and flash BLHeli\_32 rev. 32.5 (No 32.5 hex files added yet).
- Minor visual changes for rev. 32.5 in “ESC Setup” page.
- Added BLHeli\_32 rev. 32.4 hex files for:
  - Spedix\_GS40A\_4IN1\_V1\_1

### **Changes in 32.4.0.7:**

#### *General:*

- Fix for interface “L” failure on “Flash BLHeli”, when logging was enabled.
- Removed obsolete control in Flash Assistant (check box “Show Favorites only”).
- Fix for flash issues with bootloader rev. “f” and:
  - KS\_BLHeli\_32\_30A
  - Spedix\_GS30A\_V1\_1

## History of BLHeliSuite32 Revisions

### Changes in 32.4.0.6:

#### General:

- Improved automatic reflash handling for ESCs where prior the activation failed.
- Minor fix in the MusicEditor (play back function plays wrong notes, if music is disabled).
- Fix for flash issue with:
  - DALRC\_ENGINE\_40A
- Added BLHeli\_32 rev. 32.4 hex files for:
  - FrESC\_35A\_32
  - HGLRC\_T-REX\_35A\_ST
  - KS\_40A\_4IN1\_4S
  - KS\_BLHeli\_32\_35A\_V1
  - KS\_BLHeli\_32\_50A\_V1
  - Tmotor\_32Bit

### Changes in 32.4.0.5:

#### General:

- Minor fixes for FVT USB link/HID tool detection.
- Fix for EagleTree MicroVector interface connection failure.
- Added capability to handle BLHeli\_32 rev. 32.41 Beta.
  - Programmable “Sine Modulation Mode”.
  - Programmable autonomous Telemetry output every 32ms (“Auto Telemetry”).
  - Expanded Programmable “Motor Direction” to "Bidirectional Soft" and "Bidirectional Soft Rev.”.
- Added BLHeli\_32 rev. 32.4 hex files for:
  - FrESC\_80A
  - HGLRC\_DinoShot\_60A\_ST
  - Siskin\_Lite

### Changes in 32.4.0.4:

#### General:

- Fix for flash issue with
  - Hobbywing\_XRotor\_BLHeli32
  - iFlight\_Force32

#### External 4way-Interface (Cleanflight/Betaflight):

- Fixed “Initialization of flight controller denied” issue, when FC is setup for DShot or ProShot and Minimum Command is set lower the 1000 or 3D Mode is enabled.

### Changes in 32.4.0.3:

#### General:

- Added approved 32.4 hex files.
- Added BLHeli\_32 rev. 32.3 hex files for:
  - Exuav\_FishDrone
  - HAKRC\_35A
  - KS\_BLHeli\_32\_40A
  - YGRC\_32
- Added updated Operation manual for BLHeli\_32 ARM Rev32.x

### Changes in 32.4.0.2:

#### General:

- Fixed “ESC Tools... Verify flash memory” issue, where equal parameter areas are falsely signaled as unequal.

### Changes in 32.4.0.1:

#### General:

## History of BLHeliSuite32 Revisions

- Added the ability to edit and flash BLHeli\_32 rev. 32.4. (No 32.4 hex files added yet).
- Added 32.3 hex files for:
  - Aikon\_AK32\_4IN1\_35A\_6S\_V1\_0
  - Airbot\_Wraith32\_Metal\_ST
  - Flycolor\_X\_Cross\_BL\_32\_35A
  - MARS32\_40A
  - RobotDOG\_ST
  - Spedix\_GS25A\_4IN1\_4S\_V1\_1

### Changes in 32.3.0.5 Beta:

#### General:

- Music Editor improved: Simulation, store and load Music script now handles up to 8 channel polyphonic music (“Sync Startup Music to Multiple ESC” needs to be disabled).
- Improved Beta version update checking.

#### External 4way-Interface (Arduino/Cleanflight/Betaflight)

- Added additional 2 sec wait time for CF/BF interface to complete FC reboot after failed connection.
- Improved re-flash assistance for ESCs marked as “u” (unknown) or “i” (invalid).

### Changes in 32.3.0.4d Beta:

#### General:

- Music Editor improved: Simulation now uses saw-tooth wave form and playback one octave lower (optional).

### Changes in 32.3.0.4c Beta:

#### General:

- Fixed 32.3.0.3 Beta issue: “Failed to read serial number” error showing, when try to remedy a previous flash write failure.

### Changes in 32.3.0.4b Beta:

#### General:

- Fixed 32.3.0.3 Beta issue: Click on “Flash BLHeli” fails if not “Read Setup” was done before.

### Changes in 32.3.0.4a Beta:

#### General:

- Fixed issues in Music Script file manager load script file procedure. “Gen. Length” and “Gen. Interval” were not loaded correct, if prior Music was turned off.

### Changes in 32.3.0.4 Beta:

#### General:

- Added support for user programmable ESC startup Music.
- Adapted column width for “ESC Overview” with regard to shown number of ESCs.
- Fixed issues in reading setup from ini/ixi files.

### Changes in 32.3.0.3 Beta:

#### General:

- Minor improvement of screenshot dialog window visibility.
- Added readout for input good/bad frame statistics.
- Added readout for input protocol detection.
- Added partial capability to handle coming BLHeli\_32 rev. 32.4.
  - Programmable current sensor calibration.
  - Nondamped mode.



## History of BLHeliSuite32 Revisions

- Showing input signal type and good / bad frames statistics.
- No support for programmable startup music yet.

### *External Interface*

- Added hint for USB/COM (“L”) and Arduino 4way-interface(“K”) on hitting “Disconnect” to restart a recently flashed ESC by disconnecting and reconnecting the power connection before use.

### **Changes in 32.3.0.2:**

#### *General:*

- Added 32.3 hex files for:
  - Hobbywing\_Xrotor\_BLHeli32
  - FVT\_CloudPhoenix\_35A
  - HGLRC\_DinoShot\_40A\_ST
  - HGLRC\_T-REX\_60A\_ST
  - MARS32\_35A
- Slightly improved recognition of corrupted layout revisions.
- Checking server connection before opening flash dialog.

### **Changes in 32.3.0.1:**

#### *General:*

- Added approved BLHeli\_32 rev. 32.3 hex files.

### **Changes in 32.3.0.0:**

#### *General:*

- Added the ability to edit and flash BLHeli\_32 rev. 32.3. (No 32.3 hex files added yet).
- Added support for GD32F350x6 MCU

### *External 4way-Interface (Arduino/Cleanflight/Betaflight)*

- Added hint for CF/BF interface on hitting “Disconnect” to restart a recently flashed ESC by disconnecting and reconnecting the power connection before use.
- Added GD32F350x6 to device id match.
- Increased 4way-if version number to rev20.0.0.2 to indicate changes. Please ensure to use Arduino/CF/BF interface versions which contains 4way-if code of rev20.0.0.2 or higher. (BF 3.20 and CF 2.10 contain 4way-if version 20.0.0.1)

### **Changes in 32.2.0.2:**

#### *General:*

- Remove BLHeli rev. 32.2 hex files and disabled rev. 32.2 for flashing due to a compatibility issue if upgrading from rev 32.1.

### **Changes in 32.2.0.1:**

#### *General:*

- Renamed parameter “Beep Strength” to “Startup Beep Volume” and “Beacon Strength” to “Beacon/Signal Volume” and added functionality clarification in the hint text.
- Added the first approved BLHeli rev. 32.2 hex files.

### **Changes in 32.2.0.0:**

#### *General:*

- Added the ability to edit and flash BLHeli\_32 rev. 32.2. (No 32.2 hex files added yet).
- Added additional BLHeli\_32 rev 32.1 hex files.
- Fixed: not recognizing com port, if registry entry contains non ANSI characters.
- Added save/read Setup parameters to/from (\*.ini or \*.ixi) file.

## History of BLHeliSuite32 Revisions

- Fixed: unable to select an ESC with left mouse button into Multiple ESC arrangement.
- Fixed: falsely showing current sensor presence for Spedix\_GS30A\_V1\_1.
- Added indication of ESC activation state.
- Fixed: ESC name not stored with write Setup.
- Various minor fixed and improvements.

### *External 4way-Interface (Arduino/Cleanflight/Betaflight)*

- Fixed: ESC name did not show up in ESC Overview.
- Fixed: lost indication for the last ESC in a Multiple ESC arrangement, after writing setup to a prior ESC failed.

### **Changes in 32.1.0.1:**

#### *General:*

- Added BLHeli\_32 rev 32.1 hex files.
- Added support for STM32F031 MCU.
- Enhanced recognition for unknown (future) MCU types and revisions.
- Increased timeout for server connection to 30s.
- Various other improvements of GUI.

### *External 4way-Interface (Arduino/Cleanflight/Betaflight)*

- Increased timeouts for flashing and writing setup to GigaDevice MCU's.
- Added STM32F031 to device id match.
- Increased 4way-if version number to rev20.0.0.1 to indicate changes. Please ensure to use Arduino interfaces/CF/BF versions which contains 4way-if code of rev20.0.0.1 or higher.

### **Changes in 32.1.0.0:**

#### *General:*

- Added capability to use BLHeli\_32 rev 32.1 hex files.
- Fixed bug in saving screenshots of message dialogues.
- A lot tidying up and optimizing speed of application.

### *External 4way-Interface (Cleanflight/Betaflight)*

- “Motors” tab: Disabled “Calibrate ESCs” if DSHOT is enabled.

### **Changes in 32.0.0.4:**

#### *General:*

- Added identification for BLHeli32 rev 31.x test samples
- Added fix for ESC with corrupted settings area, showing up as “u” (Unknown).
- Added support for coming bootloader rev. f.
- MultipleESC sync function now allows optional exclusion of “LED setting”. Check or uncheck sync in menu “Options... Sync....”.

### **Changes in 32.0.0.1:**

### *External USB/COM (FVT-Linker) and 4way-Interfaces(Arduino/Cleanflight/Betaflight)*

- Fixed timing bug, which led to flash failures.

### **Initial release 32.0.0.0**