

Package - V3.12 Release 1

Control Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.12 from V3.11

- Update to GUI data presentation.
- Some pop-up help tip changes.

CL Background Process

V3.16 from V3.15

- Fixed bug in rudder loading whereby the rudder pedals would drive to the endstop on load engage if the Tab 3 Item 1 Lift Gain (rudder) was set = 0 or disabled.
- Modified application to continue running if no active drive cards are found at startup. The app will continue to search for cards whilst running, but this change allows app function to be checked without hardware being present.
- Improved discovery of active cards on COM ports.

February 2026

Package - V3.11 Release 1

Control Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.11 from V3.10

- Moved XPUIPC custom offset for X-Plane propwash from 0x66F8 to 66D2 to avoid clash with other custom offsets.

XPUIPCOffsets.cfg

V4 from V3

- Updated XPUIPCOffsets file to V4 to support above shift of XP propwash offset.

CL Background Process

V3.15 from V3.14

- Updated to log drive card IDs and unlocked status.

CL Controller

V2.42 from V2.33

- Added REGI button for driver card unlock function. The 120 min demo time on drive cards with beta firmware R100-25+ can now be removed by requesting and then applying unlock keys. Follow the instructions in the REGI window.
- Misc small additional improvements.

NUCLEO-F446RE Firmware

R100-25 Beta from R100-22 Beta

- Increased demo flight time for unlocked cards from 90 min to 120 min.
- Added support for unlocking cards to allow uninterrupted flight time. See CL Controller V2.42.

- Added APUC mode 3 (auto without go-ahead) as replacement for APUC mode 10. This now allows power-up calibration movements to proceed automatically following power-up of cards without waiting for live UART data from PC. See the drive setup document for details.

Note: APUC mode 3 uses power-up calibration settings from the last successful APUC mode 4 power-up. These settings are automatically stored in the micro-controller's flash memory. So to use APUC mode 3 you must previously have run the cards with APUC mode 4.

If mode 3 is selected and the card does not have previous APUC mode 4 settings saved in its flash memory then APUC will default to APUC mode 4. The settings will be automatically saved to flash memory on completion of a successful APUC mode 4 startup, mode 3 APUC can then become active.

To change the APUC settings saved in flash memory for mode 3 use you must first return the cards to APUC mode 4 and run with settings changed using the Update_Motor_Settings window in the CL Controller software. The settings saved in flash memory will be automatically updated to the new settings if the mode 4 power-up calibration is successful.

October 25

Package - V3.10 Release 1

Control Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.10 from V3.09

- Updated X-Plane window recognition to allow support for X-Plane 12.2.0-r1 +

The CL v3.10 exe can be dropped into your existing V3.09 folder if a simple upgrade is being done.

V3.09 and earlier will not recognise the new version of X-Plane and will instead run with MSFS settings. This may cause unusual behaviours.

June 25

Package - V3.09 Release 2

NUCLEO-F446RE Firmware

R100-22 Beta from R100-21 Beta

- Increased internal digital filtering on encoder A & B inputs. To assist operations with non-standard industrial encoders.

Encoder line noise can be an issue with some motors and encoders. This can show as failures in the APUC process or poor motor commutation. Solutions may involve adjusting the filtering capacitors on the IHM08M1 card or fitting line drivers to utilise all the A+/A- and B+/B- encoder lines or grounding the encoder and motor phase cable shields

This modification increases the microcontroller digital filtering to its maximum range and will help.

- Adjustments to the operation of APUC mode 9 – free running mode.
- Corrected card output torque reporting during APUC. The APUC torque output should now display correctly in the CL Controller App during APUC.

CL Controller

V2.33 from V2.31

- Changes to support APUC Mode 9
- Disabled LED window for the moment

June 25

Package - V3.09 Release 1

CL Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.09 from V3.08

- Adjusted stick stall vibration onset handling for X-Plane operation. The setting Alpha_Gain no longer affects the relative angle of attack used to trigger the stall vibrations. Corrected AoA_Rel display in the software window.
- Adjusted smoothing applied to very low speed wing AoA data reported by X-Plane. Previously the smoothing affected AoA data near the take-off speed of some slow take-off aircraft such as the Cessna 172 so adding unexpected force movements to the stick loading. The smoothing now completes at speeds below take-off speed.
- Added Use_Stall_Ind option to stall vibration trigger. See Tab 1 near Item 15.

This option allows stall vibrations to be triggered by the cockpit stall warning indicator FSUIPC offset rather than by aircraft AoA data more directly. It is intended for use in MSFS aircraft which do not report an angle of attack indicator output reliably and for which no stall vibrations might be triggered.

Probably not suited for X-Plane operation – it may cause stall vibrations to trigger only after the aircraft has stalled.

CL Configuration Manager

V3.05 from V3.04

- Added support for Use_Stall_Ind option to stall vibration trigger above.
- Removed auto-invert on Alpha_Gain setting when Elevator position is inverted – to allow flexibility in the use of Alpha_Gain.
- Updated description text for Alpha_Gain parameter.
- Updated default Apha_Gain settings in relevant aircraft config files.

May 25

Package - V3.08 Release 1

CL Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.08 from V3.07

- Enabled Show_LEDs button until function coded for STM cards

CL Background Process

V3.14 from V3.13

- Enabled Show_LEDs function

CL Controller

V2.31 from V2.30

- Improved behaviour when non-zero stick no. selected
- Enabled LED window

NUCLEO-F446RE Firmware

R100-21 Beta from R100-20 Beta

- Tidied fix for intermittent force knock – corrected intermittent APUC mis-behaviour arising from fix.
- Small changes to some individual scratchpad variable handling.

April 25

Package - V3.07 Release 2

CL Controller

V2.30 from V2.29

- Improved various window behaviours

NUCLEO-F446RE Firmware

R100-20 Beta from R100-17 Beta

- Adjusted VBUS check to flag error faster - now about 1/2 sec (20 UART calls)
- Adjusted stick out of range check to trigger at $1.05 * \text{Max disp}$ for 1st stage
- Improved current limiting accuracy
- Added fix for encoder position MSB update issue which caused intermittent sharp change in calculated axis position and hence sharp change in output force demand. This showed as intermittent knocks in the force feedback.
- Fixed inactive Voltage_Scaler setting

April 25

Package - V3.07 Release 1

CL Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.07 Release 1 from V3.06

- Disabled Show_LEDs button until function coded for STM cards
- Improved window close behaviours

CL Background Process

V3.13 from V3.12

- Improved window close behaviours
- Updated card error message texts

CL Controller

V2.29 from V2.27

- Added card UID Read
- Fixed REC button function
- Improved various window behaviours
- Updated card error texts

NUCLEO-F446RE Firmware

R100-17 Beta from R100-15 Beta

- Adjusted error reporting to prevent non-latched error from over-writing existing latched error.
- Adjusted upper voltage limit to 50V to allow testing at higher voltages.

April 25

CL Loader V3 (STMicro) for FS9/X/P3D/X-Plane

V3.06

- First beta release

CL Background Process

V3.12

- First beta release

CL Configuration Manager

V3.04

- First beta release

CL Controller

V2.27

- First beta release

XPUIPCOffsets.cfg

V3

NUCLEO-F446RE Firmware

R100-15 Beta

- First beta release

March 25