CloudLink
User Manual

V1.0.5 2024.06.14

General Information

Revision history

Version	Release date	Changes
V1.0.0	2023.09.28	Initial version
V1.0.1	2023.10.13	Added Position Stop function
V1.0.2	2024.01.15	Added Chart Function
V1.0.3	2024.02.06	Added log download and parsing functions
V1.0.4	2024.04.20	Improved client page, added advanced features
V1.0.5	2024.06.14	Added CAN protocol adaptive function

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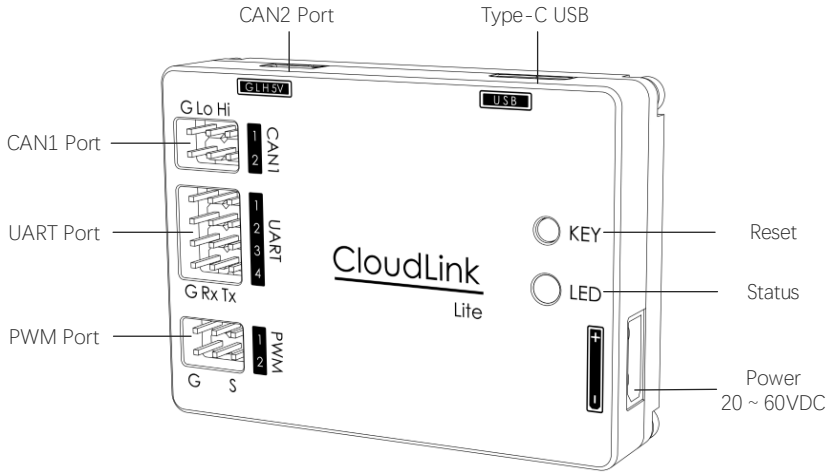
Table of contents

1. Product description

CloudLink is a tuning adapter that connects your computer to your ESC.

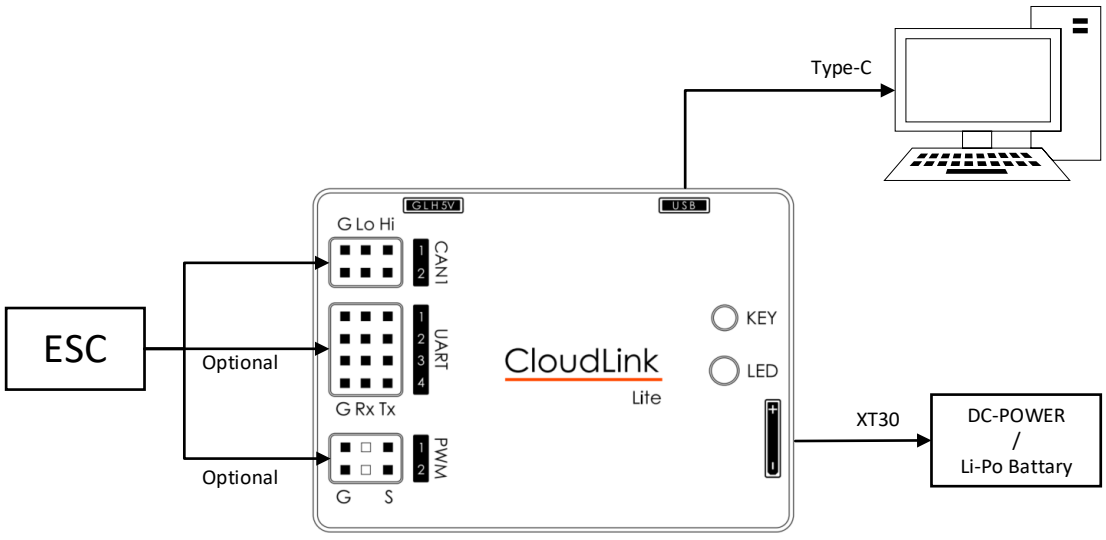
It connects to the ESCs via CAN/UART, a power supply and a USB connection to the PC.

On the PC Client software **“CloudLink”**, you can get ESC info and modify parameters to fit your application.



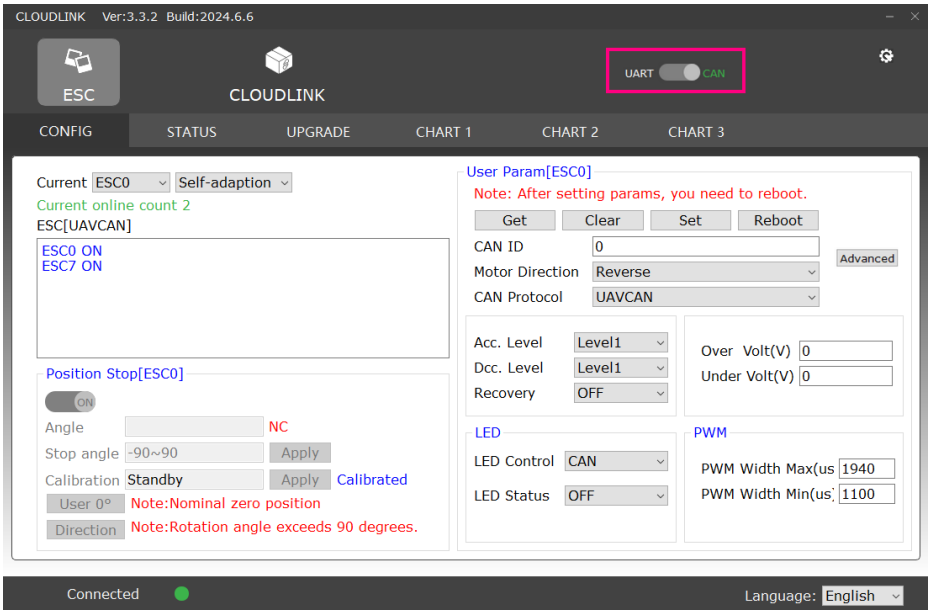
* Application on PWM port is under development, becoming.

2. Wiring Diagram



3. ESC User interface Overview

Switch the UART CAN , according to ESC connection type. The operation is different.



3.1 CAN Mode

Switch the UART CAN to **CAN**, all operations work on the ESC via can.

3.1.1 ESC CONFIG

(1) ESC list

"Online" list the ESCs connected via CAN1 port. Set any ESC to **"Current"**, this ESC will be tuning. CloudLink supports DRONECAN and UAVCAN protocols that adapt to the currently connected ESC.

(2) ESC Parm.

"GET" the selected ESC's parameters, and modify according the application you needed.

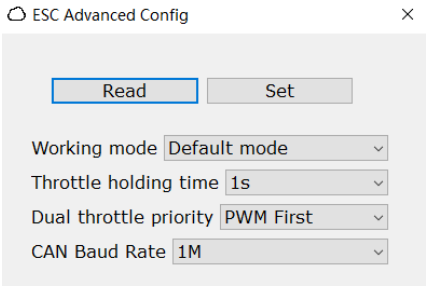
“SET” new patameters to the selected ESC, and **“REBOOT”** to take effect.

Param. List:

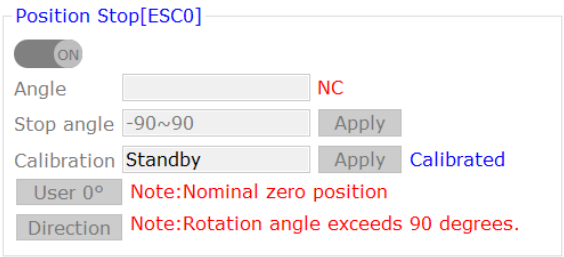
CAN ID	ESC’s CAN id. You can modify the id number to your desired non-repeating value.
Motor Direction	Reverse the motor direction, without change phase line.
CAN Protocol	CAN communication protocol for ESCs, supports UAVCAN, DRONECAN.
Dcc. Level	Set the motor Acc./Dcc. rate. Level 1 is smooth, and lever5 is quickest.
Acc. Level	
Revovery	Revovery Level limits the effect of deceleration. **MUST CHECK** that the power system supports energy return, **SET LOWEST** level if **NOT**.
Over Volt	Set the upper/lower limit value of the bus voltage. The ESC will alarm when it exceeds the limit. When power on, the limit is detected, ESC cannot start.
Under Volt	
LED Control	Set led fixed state or controlled by CAN
LED Status	OFF/Single ON/ Double ON/Single Blink/Double Blink/ Trible Blink LED color: RED/GREEN/WHITE
PWM Width Max	The default Width is 1100 (MIN) to 1940 (MAX).
PWM Width Min	

(3) Advanced

Set the ESC's operating mode, throttle hold time, dual throttle priority and CAN baud rate. The CAN baud rate of the ESC should be the same as the CloudLink CAN baud rate.



(4) Position Stop (Optional)



When the motor have a HALL sensor (optional) connected to ESC, and this function is actived, motor can stop at the target angle. Otherwise, It is disabled.

To Enable the function, turn “ON” on, and calibrate the Hall sensor. Factory calibration is done by default.

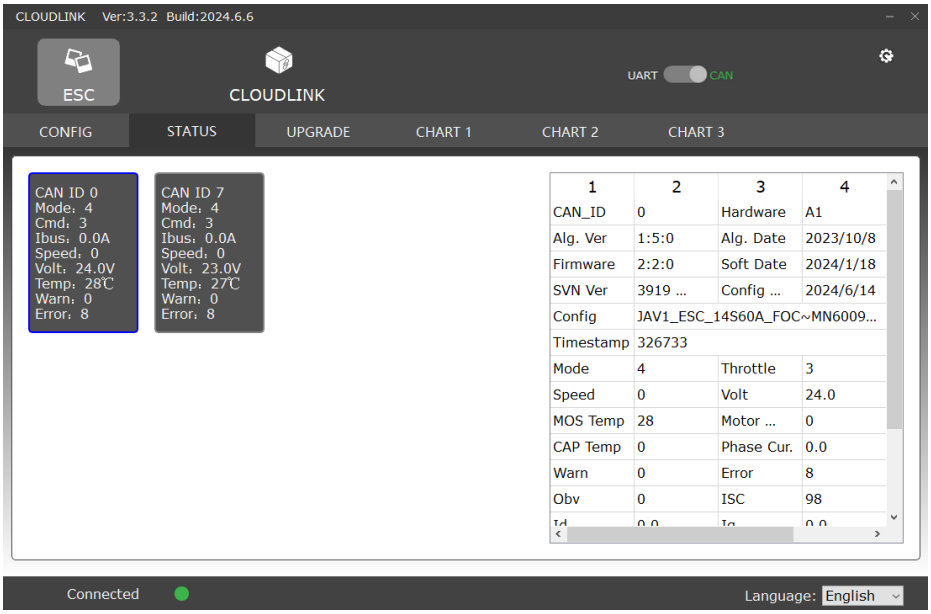
Set target angle to the **“Stop angle”,** and click on **“Apply”** button, to change the stop position.

You can click **“ User 0° ”** to make current positon to Nominal zero position.

Position angle with respect to the nominal zero degree, you can set CW/CCW by rotate the motor more than 90° then click **“ Direction ”**.

3.1.2 ESC STATUS

Choose an ESC on the left and the details are displayed on the right.



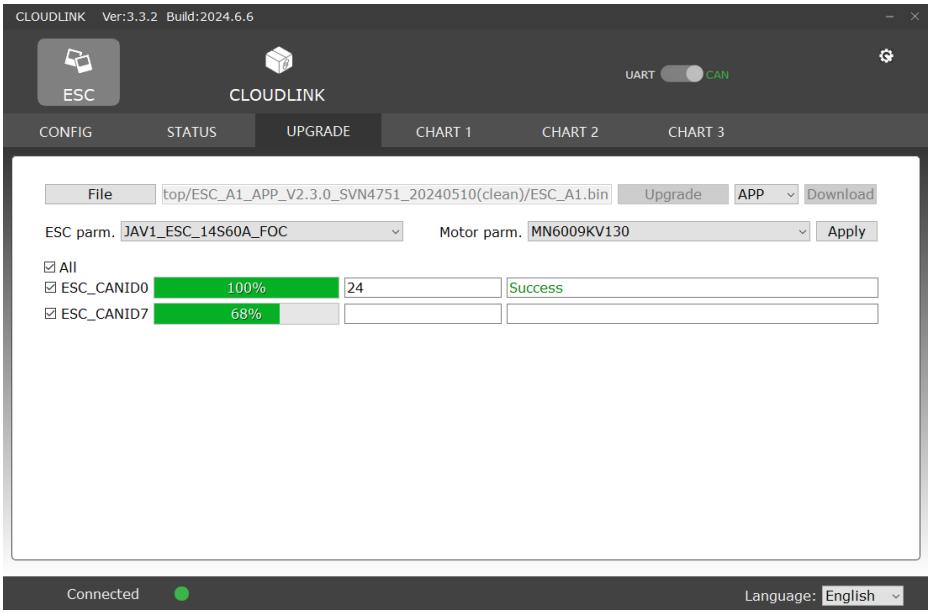
3.1.3 ESC UPGRADE

Update firmware, or set ESC parameter, Motor Parameter.

Click **“File”** to point ESC firmware file, then **“Upgrade”**.

Select ESC parameters and Motor parameters from the drop-down box, then **“Apply”**.

All the above operations effect the selected ESCs. The process and result are showing meanwhile.



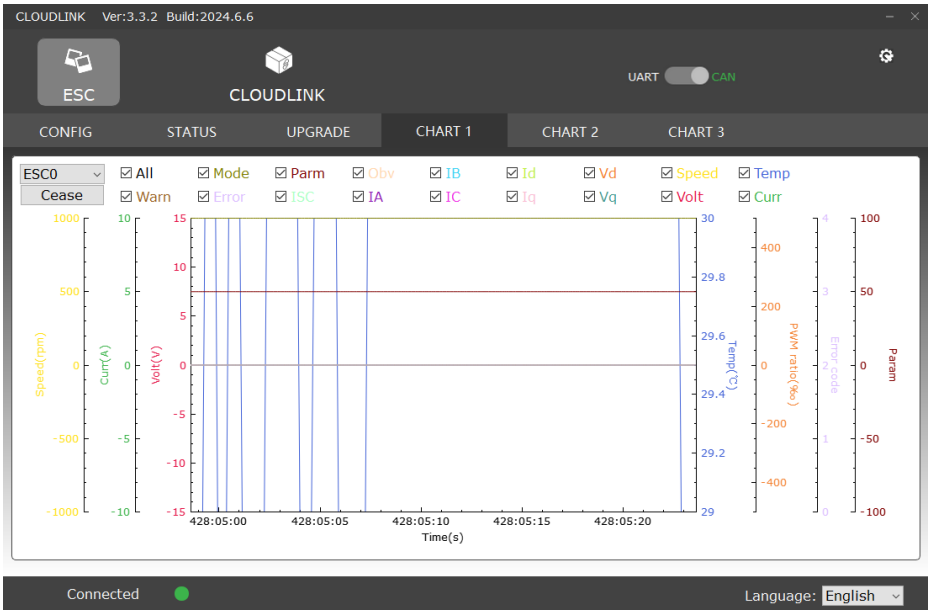
3.1.4 ESC CHART

Select one of the connected ESCs, click **“Start”**, Real-time status is displayed on the screen.

There are three chart forms (CHART1\ CHART2\CHART3) and a variety of parameters to choose from depending on your needs.

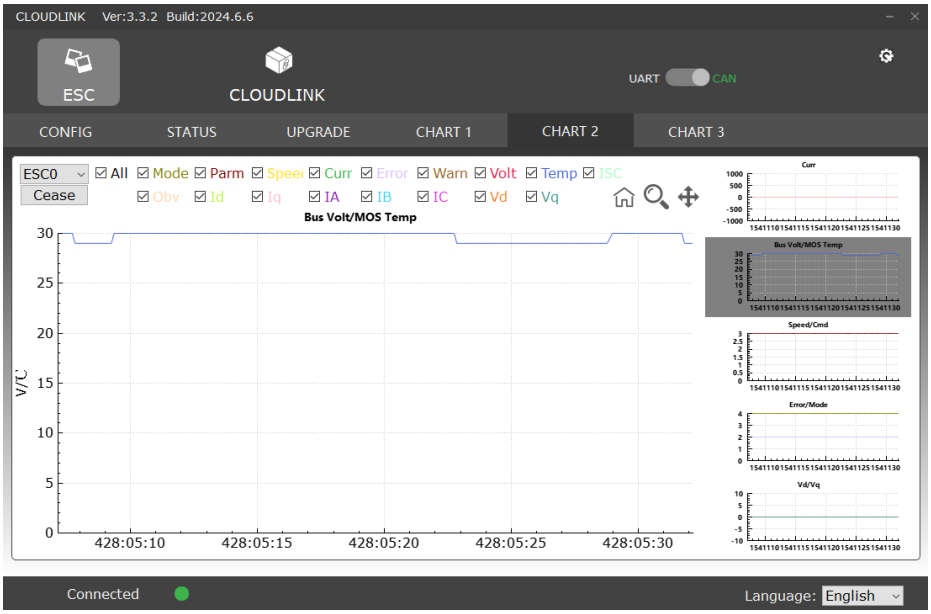
(1) CHART 1

All parameters of one ESC are illustrated on the same screen.



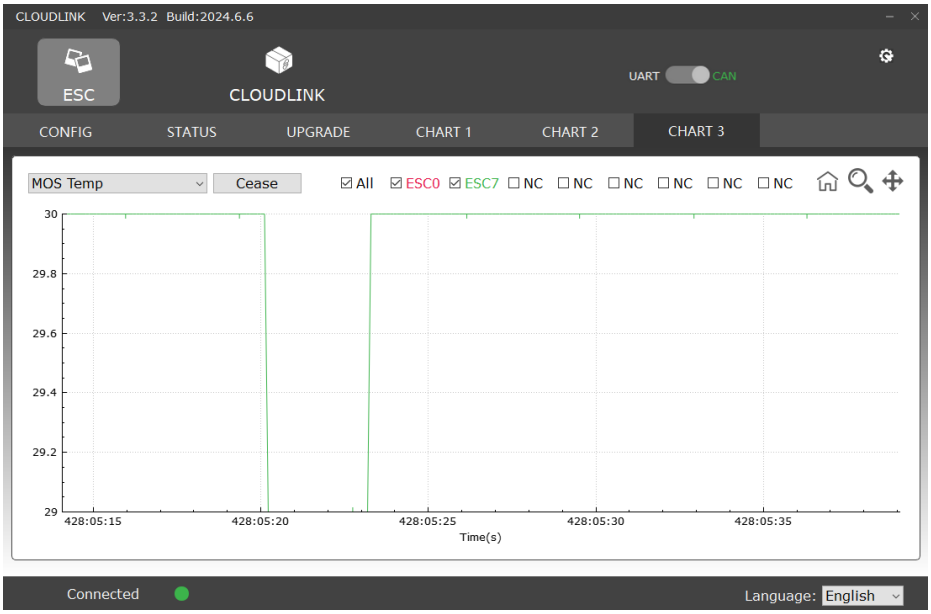
(2) CHART 2

All parameters of one ESC are illustrated on the same screen, but categorized according to similar unit scales.



(3) CHART 3

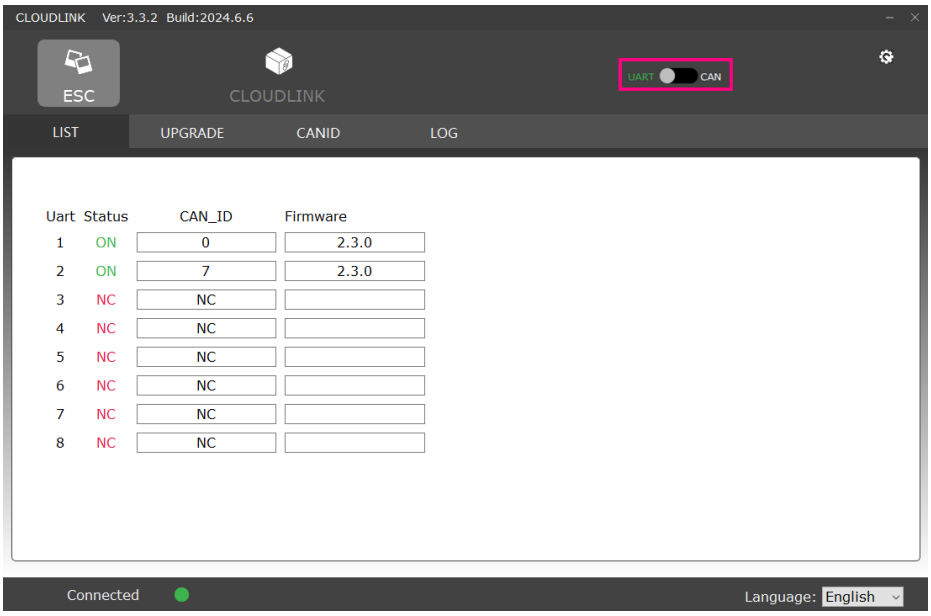
This chart shows a comparison of the same parameter for different ESCs.



3.2 UART Mode

Switch the UART CAN to **UART**, all operations work on the ESC via UART port.

The fist tab LIST all ESCs connected via UART port, and tell the software version.



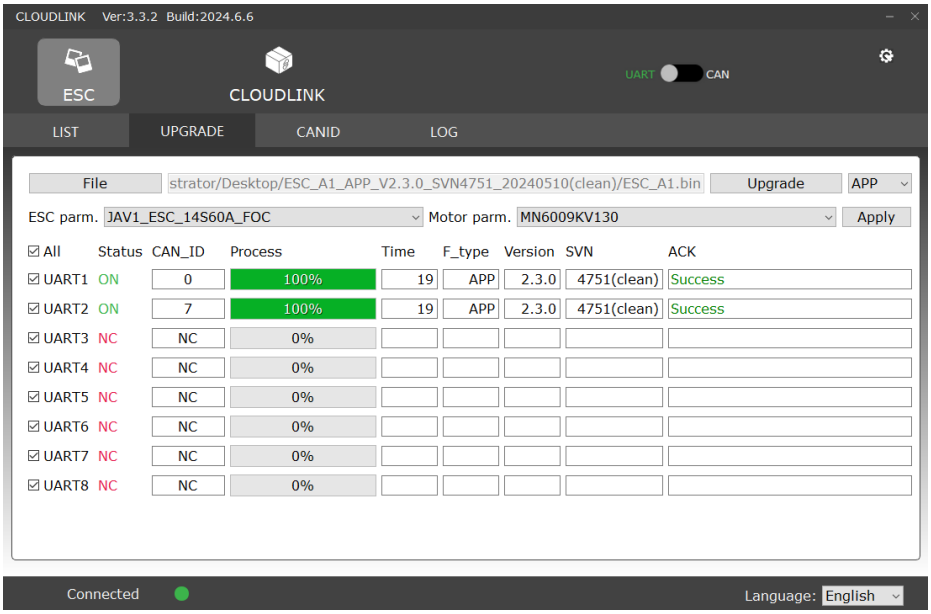
3.2.1 ESC UPGRADE

Update firmware, or set ESC parameter, Motor Parameter.

Click **“File”** to point ESC firmware file, then **“Upgrade”**.

Select ESC parameters and Motor parameters from the drop-down box, then **“Apply”**.

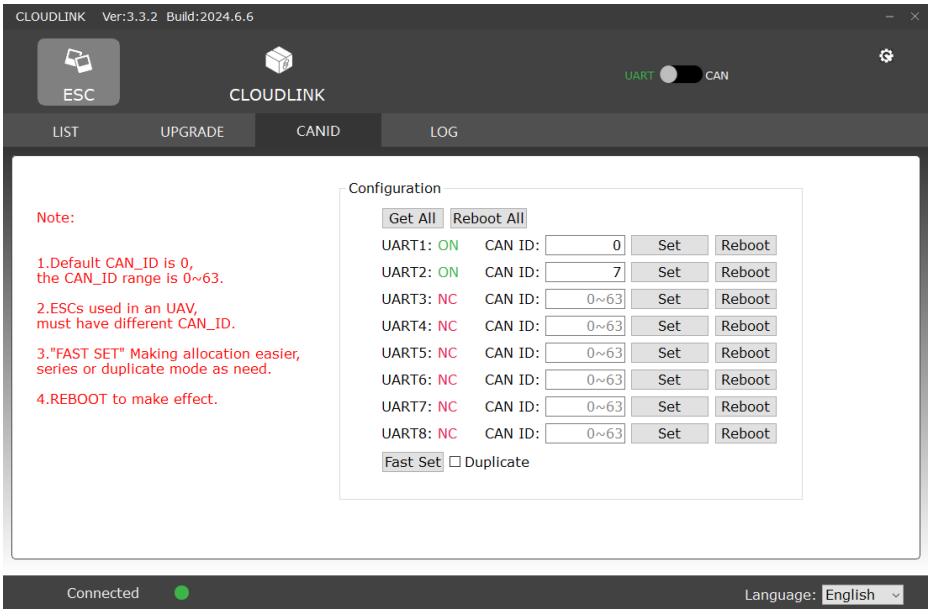
All the above operations effect the selected ESCs. The process and result are showing meanwhile.



3.2.2 CAN_ID allocation

Click **“GET”** to take the CAN_ID of connected ESCs.

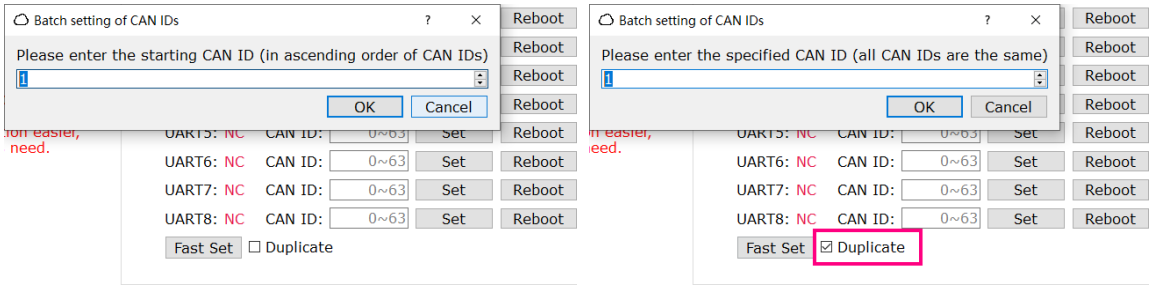
Change the ID number, if necessary, then Click **“SET”** to make it working one by one.



“FAST SET” Making allocation easier.

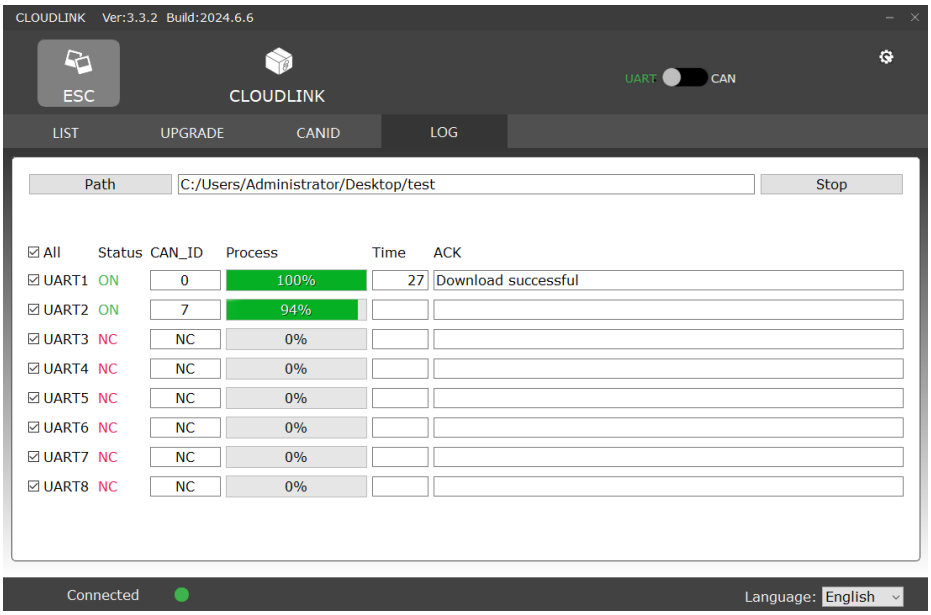
If the checkbox **“Duplicate”** is unchecked, the system automatically serializes the IDs according to starting number.

If the checkbox **“Duplicate”** is checked, all IDs are the same as you entered. When you want the ESCs’ id being set up to be the same, but they are used on different Drone.



3.2.3 ESC LOG

Click **“Path”** to select the file save path, then click **“Download”** to obtain the log information of the ESCs desired.



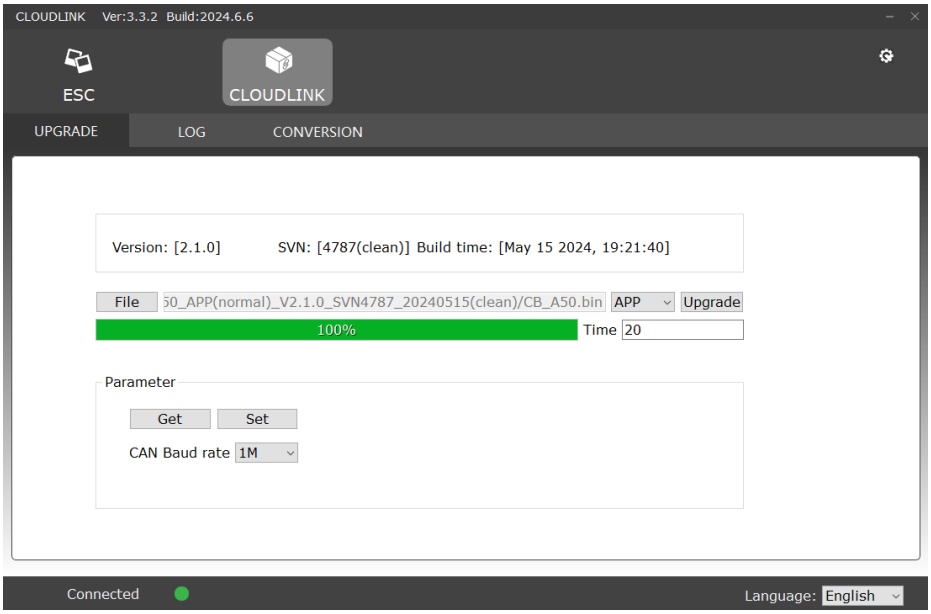
4. CLOUDLINK User interface Overview

4.1 UPGRADE

Check CloudLink Box’s firmware version, and update if necessary.

Click **“File”** to point Box’s APP/BOOT firmware file, then **“Upgrade”**.

Click **“Get”** to get the current CAN baud rate of CloudLink, you can modify the CAN baud rate of CloudLink, and then click **“Set”** to set. The connected ESC should be the same baud rate as CloudLink.



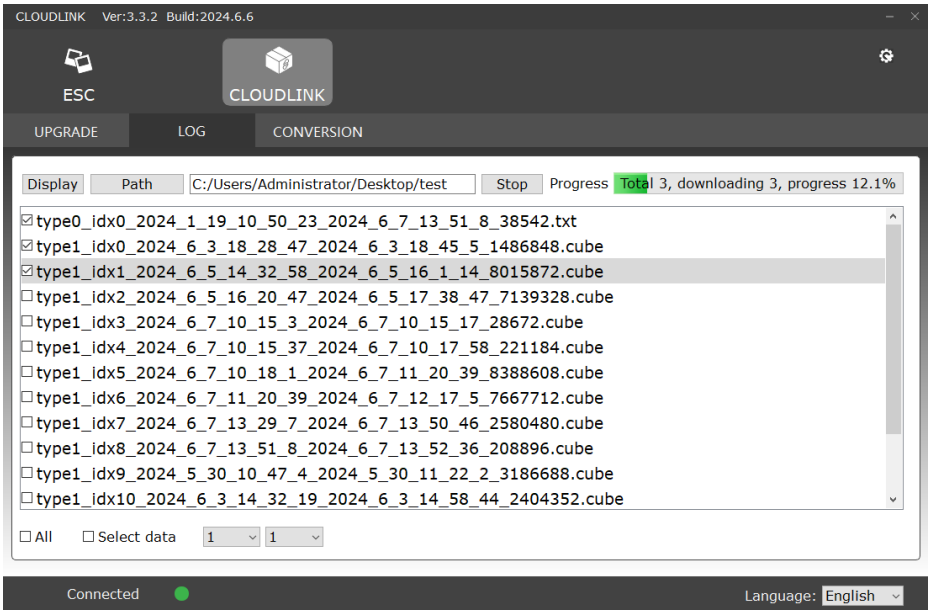
4.2 LOG

Get log saved in CloudLink Box's flash, and download.

(1) Click **"Display"** to Get log, all log files are listed, it can be point to a required day;

(2) Click **"Path"** to set the save path;

(3) Select any logs, click **"Download"** to save the log files to the path.



4.3 CONVERSION

In this Page, **"Merge"** logs in download path to one file, then **"Convert"** to csv file type, which is easy charting

and analyzing.