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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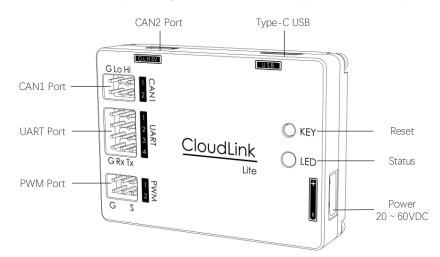
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1. Product description

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

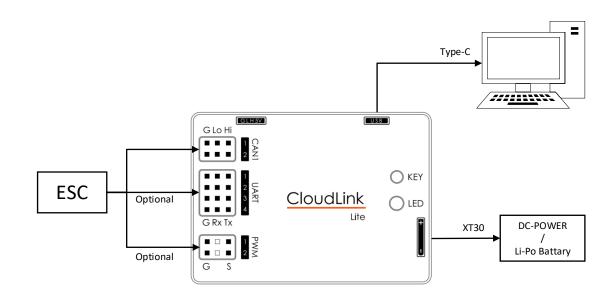
It connects to the ESCs via CAN/UART, a power supply and a USB connection to the PC.

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 CO CAN, according to ESC connection type. The operation is different.

LOUDLINK Ver	:3.3.2 Build:2024.6.	5	-
ESC	CL) OUDLINK	
CONFIG	STATUS	UPGRADE	CHART 1 CHART 2 CHART 3
Current ESC Current onlin ESC[UAVCAN ESC0 ON ESC7 ON	e count 2 1]	ion ~	User Param[ESCO] Note: After setting params, you need to reboot. Get Clear Set Reboot CAN ID 0 Motor Direction Reverse CAN Protocol UAVCAN Acc. Level Level1 Over Volt(V) 0 Under Volt(V) 0 Recovery OFF
	Standby Note:Nominal ze	NC Apply Apply Calibrate ro position gle exceeds 90 degree	LED Control CAN PWM Width Max(us 1940 LED Status OFF PWM Width Min(us; 1100
Connect	ed 🔵		Language: English 🗸

3.1 CAN Mode

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

3.1.1 ESC CONFIG

CLOUDLINK Ver:3.3.2 Build:2024.6.6		
ESC CLOUDLINK	UART CAN	
CONFIG STATUS UPGRADE CHAR	T 1 CHART 2 CHART 3	
Current ESC0 Self-adaption Current online count 2 ESC[UAVCAN] ESC0 ON ESC7 ON	User Param[ESC0] Note: After setting params, you need to reboot. Get Clear Set Reboot CAN ID 0 Motor Direction Reverse CAN Protocol UAVCAN	
Position Stop[ESC0]	Acc. Level Level1 Over Volt(V) 0 Dcc. Level Level1 Under Volt(V) 0 Recovery OFF	
Angle NC Stop angle -90~90 Apply Calibration Standby Apply Calibration Standby Apply User 0° Note:Nominal zero position Direction Note:Rotation angle exceeds 90 degrees.	LED PWM LED Control CAN V LED Status OFF V PWM Width Max(us 1940 PWM Width Min(us', 1100	
Connected 🛛 🔵	Language: <mark>English v</mark>	

(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.

ESC's CAN id. You can modify the id number to your desired non-repeating value.
Reverse the motor direction, without change phase line.
CAN communication protocol for ESCs, supports UAVCAN, DRONECAN.
Cat the mater Ass (Des rate Lovel 1 is smeath and lover 5 is suiskest
Set the motor Acc./Dcc. rate. Level 1 is smooth, and lever5 is quickest.
Revovery Level limits the effect of deceleration. MUST CHECK that the power system
supports energy return, SET LOWEST level if NOT.
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.
Set led fixed state or controlled by CAN
OFF/Single ON/ Double ON/Single Blink/Double Blink/ Trible Blink
LED color: RED/GREEN/WHITE
The default $M(dth is 1100 (M(N)) to 1040 (MAN))$
The default Width is 1100 (MIN) to 1940 (MAX).

Param. List:

(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.

C ESC Advanced Config	×
Read Set]
Working mode Default mode	\sim
Throttle holding time 1s	\sim
Dual throttle priority PWM First	\sim
CAN Baud Rate 1M	\sim

(4) Position Stop (Optional)

Position Stop[ESC0]	
ON	
Angle	NC
Stop angle -90~90	Apply
Calibration Standby	Apply Calibrated
User 0° Note:Nominal z	ero position
Direction Note:Rotation a	angle exceeds 90 degrees.

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, 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

LOUDLINK Ver:3.3) JDLINK						Ģ
CONFIG	STATUS	UPGRADE	CHART 1	CHART 2	CHAR	Т 3		
CAN ID 0	CAN ID 7			1	2	3	4	^
Mode: 4 Cmd: 3	Mode: 4 Cmd: 3			CAN_ID	0	Hardware	A1	
Ibus: 0.0A Speed: 0	Ibus: 0.0A Speed: 0			Alg. Ver	1:5:0	Alg. Date	2023/10/8	
Volt: 24.0V	Volt: 23.0V			Firmware	2:2:0	Soft Date	2024/1/18	
Temp: 28°C Warn: 0	Temp: 27°C Warn: 0			SVN Ver	3919	Config	2024/6/14	
Error: 8	Error: 8			Config	JAV1_ESC	_14S60A_FOO	~MN6009	
				Timestamp	326733			
				Mode	4	Throttle	3	
				Speed	0	Volt	24.0	
				MOS Temp	28	Motor	0	
				CAP Temp	0	Phase Cur.	0.0	
				Warn	0	Error	8	
				Obv	0	ISC	98	
				т.н <	0 0	To.	0.0	• *
Connected						Languag	ge: English	

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

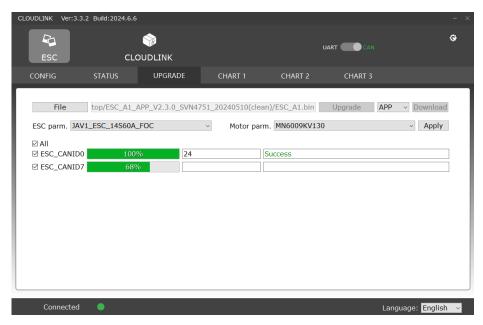
3.1.3 ESC UPGRADE

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.



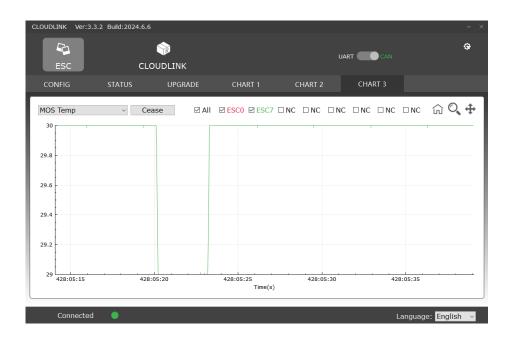
(2) CHART 2

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

CLOUDLINK Ver:	:3.3.2 Build:2024.6.1	5 OUDLINK			UART CAN	- ×
CONFIG	STATUS	UPGRADE	CHART 1	CHART 2	CHART 3	
ESC0 V AI		☑ Speet ☑ Curr ☑ Er ☑ Iq ☑ IA ☑ IE Bus Volt/MOS 1	B ☑ IC ☑ Vd		∫ Q ↔ 50 -50	0
25			<u></u>	/		Bus Volt/MOS Temp
20 27 15					2	5
10						Error/Mode
5						
Connect		:05:15 428:0	5:20 428:0	05:25 428	:05:30 -1	Language: English ~

(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.

CLOUDLINK Ver	:3.3.2 Build:2024.6.6				– ×
ESC	CLOU) JDLINK			Ģ
LIST	UPGRADE	CANID	LOG		
Uart Statu 1 ON 2 ON 3 NC 4 NC 5 NC 6 NC 7 NC 8 NC	s CAN_ID 0 7 NC NC NC NC NC NC	Firmware			
Connect	ed 🔵			Language: Englis	h ~

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.

CLOUDLINK Ver:3.3.		4.6.6			uart 🌒 C	AN	- ×
LIST	UPGRADE	CANID	LOG				
File ESC parm. JAV1_				751_2024051 parm. MN600	0(clean)/ESC_A1.bin	Upgrade	APP ~ Apply
☑ All Status	CAN_ID	Process	Time F_ty	pe Version	SVN ACK		
UART1 ON	0	100%	19	APP 2.3.0	4751(clean) Succes	S	
UART2 ON	7	100%	19	APP 2.3.0	4751(clean) Succes	S	
☑ UART3 NC	NC	0%					
UART4 NC	NC	0%					
UART5 NC	NC	0%					
UART6 NC	NC	0%					
UART7 NC	NC	0%					
UART8 NC	NC	0%					
Connected	•					Language:	English v

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.

ESC CLOUDLINK				IRT	CAN	
LIST UPGRADE CANID	LOG					
	Configuration					
lote:	Get All Re	boot All				
	UART1: ON	CAN ID:	0	Set	Reboot	
.Default CAN_ID is 0, he CAN_ID range is 0~63.	UART2: ON	CAN ID:	7	Set	Reboot	
.ESCs used in an UAV,	UART3: NC	CAN ID:	0~63	Set	Reboot	
nust have different CAN_ID.	UART4: NC	CAN ID:	0~63	Set	Reboot	
"FAST SET" Making allocation easier,	UART5: NC	CAN ID:	0~63	Set	Reboot	
eries or duplicate mode as need.	UART6: NC	CAN ID:	0~63	Set	Reboot	
.REBOOT to make effect.	UART7: NC	CAN ID:	0~63	Set	Reboot	
	UART8: NC	CAN ID:	0~63	Set	Reboot	
	Fast Set 🗆 🛙	Duplicate				
	_	_	_	_		_

"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.

C Batch setting	of CAN IDs	? ×	Reboot	C Batch setting	of CAN IDs	? ×	Reboot
Please enter the starting CAN ID (in ascending order of CAN IDs)			Reboot	Please enter the specified CAN ID (all CAN IDs are the same)			Reboot
1							
	ОК	Cancel	Reboot			OK Cancel	Reboot
ion easier,	UAKTS: NC CAN ID: 0~0.	set set	Reboot	n easier,	UAKTS: NC CAN ID:	0~03 Set	Reboot
need.	UART6: NC CAN ID: 0~63 Se	Set	Reboot	ieed.	UART6: NC CAN ID:	0~63 Set	Reboot
	UART7: NC CAN ID: 0~6	Set	Reboot		UART7: NC CAN ID:	0~63 Set	Reboot
	UART8: NC CAN ID: 0~63	3 Set	Reboot		UART8: NC CAN ID:	0~63 Set	Reboot
	Fast Set Duplicate			Fast Set 🗹 Duplicate]		

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.

CLOUDLINK Ver:3.3.2 Build:2024.6.6								
ESC	CLC) DUDLINK			UART	CAN	Ģ	
LIST	UPGRADE	CANID		LOG				
Path	C:/Users/A	dministrator/Des	ktop/tes	t			Stop	
All Status	CAN_ID Proce	255	Time	ACK				
UART1 ON	0	100%	27	Download successf	ul			
UART2 ON	7	94%						
UART3 NC	NC	0%						
UART4 NC	NC	0%						
UART5 NC	NC	0%						
UART6 NC	NC	0%						
UART7 NC	NC	0%						
UART8 NC	NC	0%						
Connected	•					Langua	ge: English 🗸	

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.

CLOUDLINK	Ver:3.3.2 Build:2024.6.6		- ×
8			¢
ESC	CLOUDLINK		
UPGRADE	LOG CONVERSION		
	Version: [2.1.0] SVN: [4787(clean)] Build time: [May 15 2024, 19:21:40]		
	File 50_APP(normal)_V2.1.0_SVN4787_20240515(clean)/CB_A50.bin APP Upgrade 100% Time 20]	
1			
	Parameter		
	Get Set		
	CAN Baud rate 1M v		
Conn	ected 📃	Language: English	~

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.

CLOUDLINK Ver:3.3.2	Build:2024.6.6				- ×
ESC	cio				Ģ
UPGRADE	LOG	CONVERSION			
Display Path	C:/Users//	Administrator/Desktop/test	Stop Progress	Total 3, downloading 3	, progress 12.1%
☑ type0_idx0_202	24_1_19_10	_50_23_2024_6_7_13_51	_8_38542.txt		^
✓ type1_idx0_202	4_6_3_18_	28_47_2024_6_3_18_45_	_5_1486848.cube		
✓ type1_idx1_202	24_6_5_14_3	32_58_2024_6_5_16_1_1	4_8015872.cube		
type1_idx2_202	4_6_5_16_	20_47_2024_6_5_17_38_	47_7139328.cube	e	
type1_idx3_202	24_6_7_10_:	15_3_2024_6_7_10_15_1	.7_28672.cube		
type1_idx4_202	24_6_7_10_	15_37_2024_6_7_10_17_	_58_221184.cube		
type1_idx5_202	4_6_7_10_	18_1_2024_6_7_11_20_3	9_8388608.cube		
type1_idx6_202	4_6_7_11_	20_39_2024_6_7_12_17_	5_7667712.cube		
type1_idx7_202	4_6_7_13_3	29_7_2024_6_7_13_50_4	6_2580480.cube		
type1_idx8_202	4_6_7_13_	51_8_2024_6_7_13_52_3	86_208896.cube		
□ type1_idx9_202	24_5_30_10	_47_4_2024_5_30_11_22	2_2_3186688.cube	2	
type1_idx10_20	24_6_3_14	_32_19_2024_6_3_14_58	_44_2404352.cut	be	~
□ All □ Select da	ta 1 ~	1 ~			
Connected	•			Lang	uage: <mark>English ~</mark>

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.

