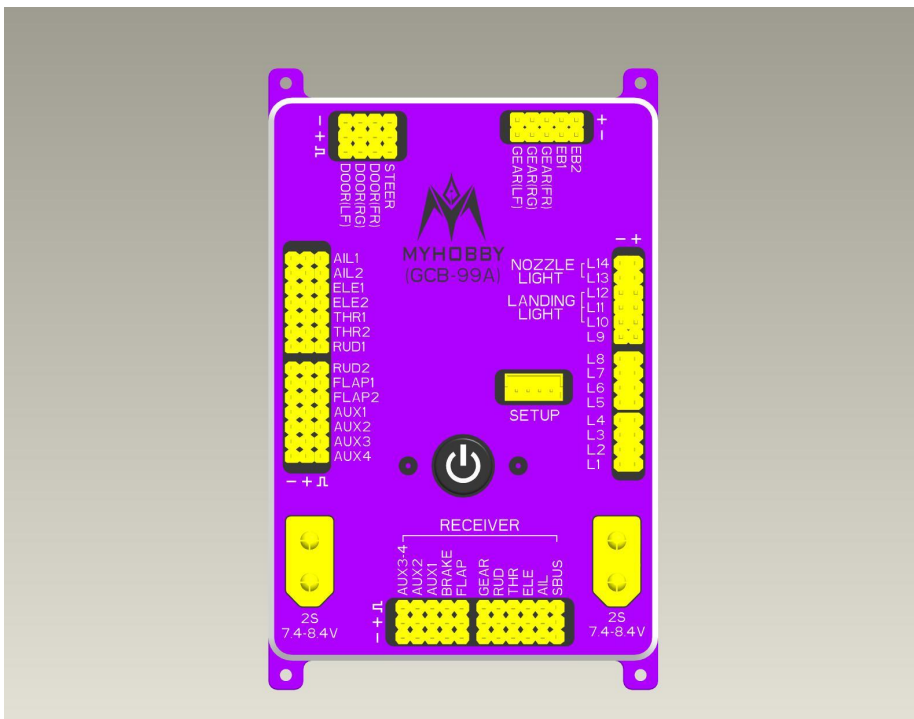


GCB-99A Control box Quick Start

Summariz:

GCB-99A is a control box that integrates power management, servo management, electric landing gear system, electric brake, navigation lights, gyro, front wheel correction, etc. It can almost meet all turbojet models based on electric landing gear and electric brakes. It has achieved a high integration of common functions of turbojet model, and various parameters of the control box can be freely set through the mobile phone client or setup card and convenient for the user to install and debug.



GCB-99A Control box



Setup card

Power management function

The control box is powered by a dual jack battery (2sLiPo), a redundant design that seamlessly switches between two batteries, or can operate with a single battery. The voltage of output end of the control box is equal to the voltage of the battery at the input end (when two batteries are connected at the same time, the control box will automatically choose to take power from the battery with higher voltage); The maximum load current can reach the battery discharge current, for example: a 2S 3000mAH 30C Lipo battery used for control box, theoretically the load current can reach 90A. The power supply battery voltage must be between 7.4v-8.4v, otherwise the control box cannot be turned on due to protection (to prevent too high voltage from damaging the equipment, or too low voltage from causing insufficient power supply). The battery level is displayed by indicator status. The indicator is green (8.0-8.4V), blue (7.6-8.0V), and red (7.4-7.6V). When the backup battery is not connected, the red indicator blinked. The precise voltage value can also be displayed through the mobile phone APP or setup card.

Power on: Press and hold the power button for at least 2 seconds and then release. The battery voltage must be between 7.4-8.4V. The control box cannot be turned on if it is lower than 7.4V. However, when the battery voltage of the device is lower than 7.4V, the control box will

continue to be turned on to prevent the device from shutting down due to low battery voltage during the flight. Therefore, when the indicator is red, please replace the battery in time.

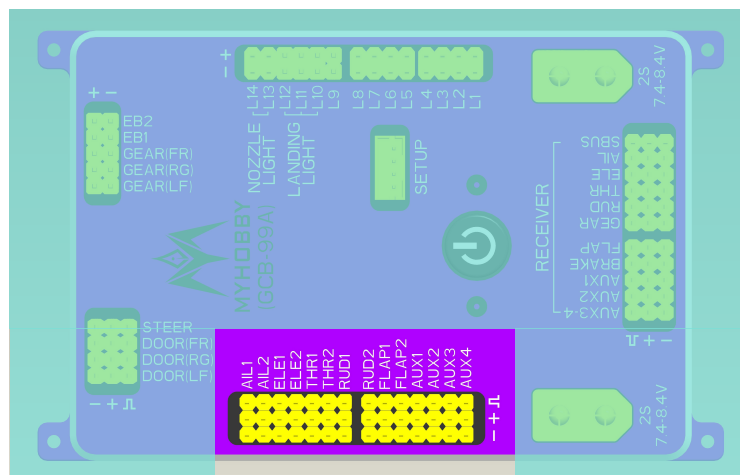
Power off: Press and hold the power button for an least 2 seconds and then release.

Setup card instructions



Connect the setup card to the GCB-99A control box with a special data cable, and turn on the power supply of the control box. There are four buttons on the setup card "+, -, ENT and ESC". After selecting the language with "+, -", press ENT to enter the setting menu.

1. Servo setting:



There are 14 servo jacks labelled AIL1, AIL2, ELE1, ELE2, THR1, THR2, RUD1, RUD2, FLAP1, FLAP2, AUX1, AUX2, AUX3, AUX4 respectively.

Each servo can be individually set direction, neutral point, high and

low end point.

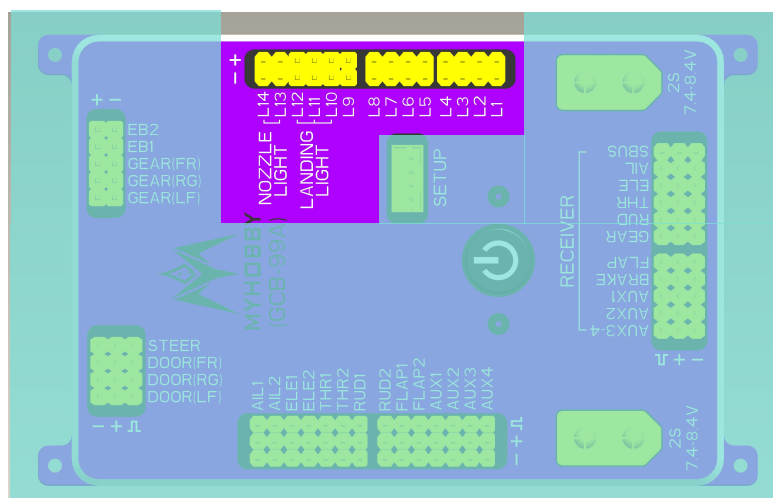
When setting parameters, press "+", "-" to select the item of parameter to be modified, or to modify the value. Press ENT to enter the parameter selected. After modification, press ESC to exit. The modified parameter is saved and takes effect.

If using the control box tail burner or gyro function, make sure that the throttle channel of the receiver must first output to the control box input jack, then the throttle signal line of the turbojet ECU must be connected to the control box output jack THR1 or THR2, and the low and high points of THR1 or THR2 must be set to 135. The throttle channel direction is set to positive.

Servo jack and receiver jack corresponding table:

steering gear output channel	signal input channel
AIL1、AIL2	AIL
ELE1、ELE2	ELE
THR1、THR2	THR
RUD1、RUD2	RUD
FLAP1、FLAP2	FLAP
AUX1	AUX1
AUX2	AUX2
AUX3	AUX3-4
AUX4	

2. Navigation light setting:



The navigation light has 14 ports, divided into 7 independent groups, Labelled L1-L2, L3-L4, L5-L6, L7-L8, L9, L10-L12, L13-L14 respectively, the internal current limit has been done, LED light can be directly connected to the control box navigation light port, do not add current limiting resistance, otherwise affect the brightness.

L1-L2, L3-L4, L5-L6, L7-L8, and L9 can be set to four modes: steady on, single blinking, double blinking, and triple blinking.

L10-L12 are landing gear lights that can be set to on or always off. When set to on, the navigation light is controlled by the landing gear retraction/release signal, the navigation light is lit when the landing gear is down, and the navigation light is turned off when the landing gear is up.

L13-L14 is the tail burner, when set to on, the tail burner is controlled by the throttle signal, and the brightness changes with throttle signal.

M2: The front door operates in the same way as M0; The left and right doors operate in the same way as the M1.

M3: The front door operates in the same way as M1; The left and right doors operate in the same way as the M0.

B. Locked-rotor current setting:

The purpose of blocking current setting is to protect the landing gear equipment, when the control box load (landing gear) current exceeds the set value, the control box will disconnect the output to protect the landing gear equipment. Setting reference value: the small and medium landing gear is set to 1.0A, the large landing gear is set to 1.5-2.0A, and the maximum setting value should not exceed 3.0A.

The ground debugging can be increased bit by bit from the minimum, and the set current value can ensure the normal retraction of the landing gear.

C. Delay setting:

This time is the running time of landing gear, and the purpose is to prevent the landing gear blocking current from being set too large, resulting in the failure to reach the set blocking current and the continuous output power of the control box, resulting in the damage of the landing gear motor. Setting a reasonable delay value can ensure that as long as a single landing gear action reaches the limited operating time, regardless of whether the blocking current reaches the preset value, the

control box will disconnect the power supply of the landing gear motor.

The delay time is calculated as follows: Assume that the time required to open or retract the landing gear normally is T seconds, Set the time to T+2 seconds. For example, the landing gear retracting time takes 3 seconds, and the delay time is set to 5 seconds.

Note that too short setting time will stop the action of landing gear during operation. If the setting time is too long and the blocking current is too large, the blocking time will be too long, resulting in the possibility of the motor of the landing gear overheating or even burning.

D. Rollback time setting:

After the landing gear is retracted in place, the motor rotates reversely a bit to facilitate smoother operation next time. The value range is 0 to 10. 0 indicates no rollback, and 10 indicates 100 milliseconds rollback.

If the set time is too large, resulting in the landing gear retracting can not be fully in place, just reduce the set value appropriately.

Cabin door setting:

The front hatch door, the left hatch door and the right hatch door are respectively set, and the setting method is the same as that of the above servo setting.

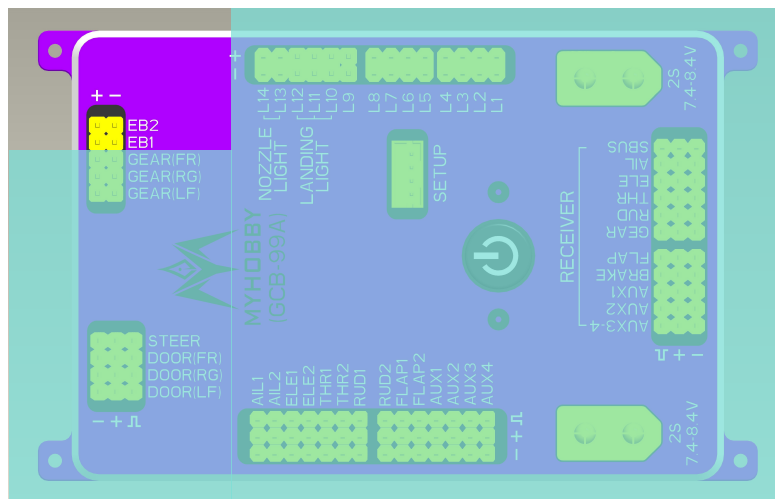
Front wheel setting:

Set the front wheel steering servo in the same way as above.

Front wheel correction takes effect when the landing gear is lowered

and turns off when the landing gear is retracted. The setting range of deviation correction sensitivity is -100% to 100%, and the initial setting is about 50%. The user can control the deviation correction amount of the steering servo by adjusting the degree of sensitivity, so as to achieve the best deviation correction effect. "+, -" adjust the front wheel to correct the direction, such as setting 50% to find that the correction direction is reversed, change to -50%.

4. brake setting:



There are two ports labelled EB1 and EB2 for electric brake, insert two electric brake cable into the ports, be careful of "+" and "-" pole. The braking force setting range is "0%-100%", 100% is the maximum braking force, which can be set by the user according to personal habits, and the brake is only effective when the landing gear is lowered.

5. Gyro setting:

The GCB-99A control box has a built-in gyro scope, which can provide an enhanced stability mode for the aircraft, mainly enhance the wind

resistance of the aircraft in the air, and do not affect the control feel of the pilot.

A. Aircraft airfoil selection

The control box has three modes for the user to choose, regular layout, delta wing, V-tail, and the user can choose the corresponding mode according to the aircraft type. The corresponding mixed control has been made in the delta wing and V-tail mode, so the remote control needs to be set to the conventional layout model.

B. Enable gyro

You can choose to turn gyro on or off.

C. Aileron, elevator, rudder parameter setting

The initial sensitivity setting should not be too large during the first flight, 50% is recommended, and then adjust according to the flight situation. The specific adjustment methods are as follows:

When the aircraft is flying at high speed, if there is a tremor (pitch, roll, heading), it is because the sensitivity is set too large. In this case, it is necessary to reduce the throttle, slow down the aircraft, and adjust the sensitivity properly after landing. If it is found that the stability of the aircraft is not good, and the aircraft wobbles greatly when the wind is blowing, it is necessary to adjust the sensitivity by increasing by 5%-10% each time. When the receiver's throttle signal is connected to the control box, gyro sensitivity is automatically adjusted with the throttle to

maintain the best stability effect at both low and high speed.

Before taking off, please confirm again whether the gyro corrected direction is correct! The wrong setting will cause CRASHING!

6. System Settings

A. Select the signal source

At present, the control box signal source supports PWM and Sbus. PWM mode can be matched with any type of remote control, Sbus can only be used for Futaba.

B. Throttle mixed control pitch

The mixing control is set to solve the pitch attitude change caused by the change of speed. It is recommended to use the mixed control programming or conditional mode provided by the remote control.

C. Flap mixed control pitch

It is also recommended to use the mixed control programming or conditional mode provided by the remote control.

D. Save and write parameters

a. Save parameters: All parameters of the control box are saved in the memory of setup card.

b. Write parameters: Write related parameters saved in the memory of setup card to the control box. This operation overwrites existing parameters in the control box.

Adjustment tip:

Due to the complexity of the landing gear related settings, Set the landing gear light and the door correctly before landing gear setting. Keep the landing gear in the retracted position during setting. Keep the landing gear in the power off state (pull the landing gear cable out of the control box). After the door and landing gear are set correctly, insert the three landing gear into the corresponding sockets. If it is found that the direction of the landing gear is wrong, just switch the positive and negative poles of the cable (+/-).

Mobile APP Settings are the same as Settings box Settings.