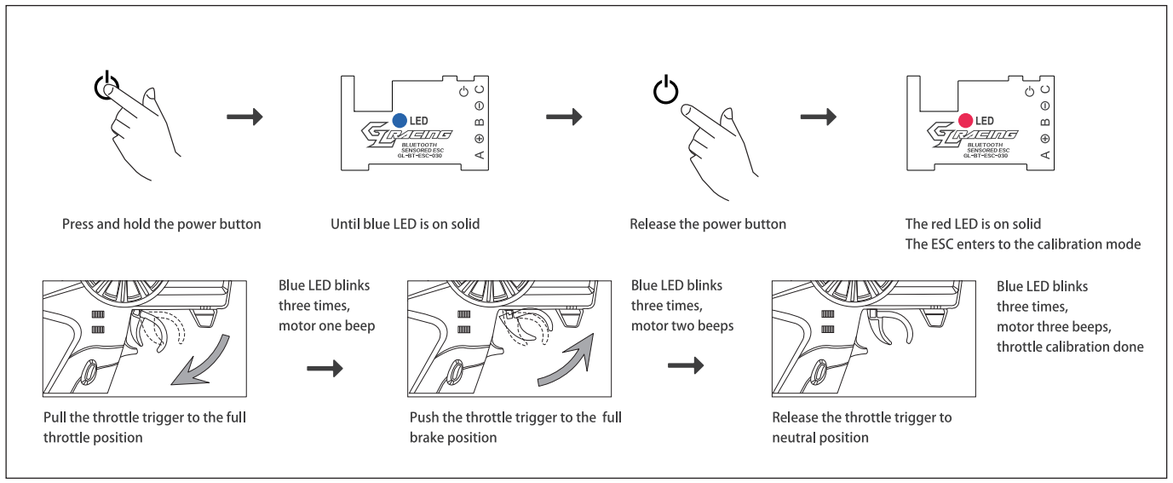
GL-BT-ESC-030

1. Throttle Calibration



2. Android and iOS APPs

Android App downloading procedure:

1.Scan the QR code to download the App (the name of the app is ESC1) with any search engine.

2.Click “DOWNLOAD”, “INSTALL”, “OPEN”, and choose “ALLOW” to all the pop-upquestions to turn on Location Services & Bluetooth on your phone, and then click “CONNECT” toconnect the ESC.

iPhone App downloading procedure:

1.Search for “ESC1” in the App Store or scan the QR code to download and install the App.

2.Turn on Location Services & Bluetooth on your phone, open the App/ESC1 and then click “CONNECT” to connect the ESC.

Note: the factory default password for Bluetooth is 0000 (with the ESC powered on, press andhold the power button for about 10 seconds to reset it to factory default).

3. Programmable Items Description

SECTION	PROGRAMMABLE ITEMS	PROGRAMMABLE ITEMS DESCRIPTION
THROTTLE	Throttle Response	It indicates how often the ESC performs throttle adjustment.
	Coast	When the throttle value changes from high to low, it will decrease every 0.01 second. For example: the current throttle stick is at 80%, and the next moment is at 30%. If the throttle coast is not turned on, the throttle value will be immediately reduced from 80% to 30%. If it is turned on, the throttle value will be 80%, 70%... 30% dropped so slowly. Note: If the throttle stick is at 0% at the next moment, the throttle value will be equal to 0 immediately. This item only works within the forward throttle range, and has the most obviouse effect at 30% throttle.
	Neutral Range	Throttle midpoint width, the range of the throttle stick in the centered state.
	Min. Throttle	The minimum throttle, limit the throttle value can not be too small, this item can be adjusted according to the RC car con⌧guration, the smaller the lighter car, this item can be adjusted down, so that the RC car can get a very low speed, the larger the heavier car, this item can be adjusted large, it can eliminate the jitter caused by insuficient starting power.
	Minus	Throttle minus, decay the throttle value. For example, if the throttle stick is at 20%, if the decay is not turned on, the throttle value is 20%. After setting it to 1% decay, the output throttle value is 20% * (1-1%) = 19.8%. This item only works within the forward throttle range.
	Minus Range	For example, if it is set to 50%, it means that the throttle below 50% will be used for throttle Minus. This item only works within the forward throttle range.
	Max. Forward force	If it is set to 80%, the actual throttle value is 80% when the throttle stick is at 100% of the forward throttle.
	Max. Reverse force	If it is set to 80%, the actual throttle value is 80% when the throttle stick is at the 100% position of the throttle in the reverse direction.
BRAKE	Brake Response	It indicates how often the ESC will perform the brake adjustment.
	Min. Brake Force	It limits the minimum braking force.
	Max. Brake Force	If the minimum braking force is set larger than the maximum braking force, the maximum braking force is equal to the minimum braking force.
	Fwd. Drag Brake Force	It refers to the braking force when the throttle stick returns to the 0% position from the forward stroke after the RC car moves forward. If it is turned on, the ESC will turn on correspond brake force when the throttle stick at the 0% position.
	Fwd. Drag Brake Response	It indicates how often the ESC performs drag brake adjustment.
	Rev. Drag Brake Force	Rev drag braking force refers to the braking force when the throttle stick returns to the 0% position from the reverse stroke after the RC car moves backward.
	Rev. Drag Brake Response	It indicates how often the ESC performs drag brake adjustment.
	PWM Freq.	Brake PWM frequency.
BOOST	Boost Timing	Turn on the timing to make the motor get a higher speed.
	Trigger	Boost trigger mode includes throttle trigger and RPM trigger.
	Throttle Threshold	For example, Boost timing is set to 30 degrees, 50% throttle threshold triggers Boost, then the throttle stick reaches 50% position to enable Boost timing, and when the throttle stick reaches 100%, 30 degree timing is enabled. The timing value increases linearly from 50% to 100% throttle.
	RPM Threshold	The Boost RPM triggers the threshold. When the motor reaches the RPM threshold, the set boost timing will be fully turned on.
	Initial Angle	For example, set the boost timing to 30 degrees, 50% of the throttle triggers Boost, the initial angle is 2 degrees, when the throttle is at 50%, the actual boost angle is 2 degrees (if the initial angle higher than the boost timing, then the ⌧nal angle is the Boost timing initial value).
	Angle Inc. Rate	For example: set the Boost timing to 30 degrees, and the throttle triggers Boost. If the throttle value is instantly increased to 100%, the Boost timing will not reach 30 degrees immediately, but will increase to 30 degrees at the set increasing speed; It is the same when it is set to RPM trigger.
	Angle Dec. Rate	The rate at which the boost timing is reduced to 0 when the boost trigger condition is no longer met.
TURBO	Turbo Timing	Turbo timing is the timing that starts when the throttle stick reaches 100%.
	Turbo Inc. Rate	The speed with the Turbo timing increasing. For different motors, if the speed is set too fast, there will be large burst current and the motor will vibrate violently.
	Turbo Dec. Rate	The speed with the turbo timing decreasing. When the throttle stick leaves the 100% position, the conditions for turning on Turbo are no longer met, but the Turbo timing will not be immediately reduced to 0, but will decrease at the set speed. When the Turbo is turned on, the motor speed is very fast. If the Turbo timing value quickly decreases to 0 at this time, the speed decreases too fast, the motor will vibrate severely and reverse high voltage, so please choose the appropriate timing to reduce the speed.
	Turbo Delay	Turbo delay refers to a delay after the throttle stick reaches 100% before turning on Turbo.
	Delay Reload	The update time point of the delay. When the timing has been triggered, if the throttle leaves 100% and quickly returns to 100%, whether to delay again or not. Wait: wait until the timing is reduced to 0, then update the delay, and then re-delay; Instant: update the delay as soon as the throttle leaves 100%, and start the re-delay immediately.
GENERAL	Motor Rotation	In some RC cars, under the default rotation, forward & backward are reversed. At this time, setting another motor rotation can correct the error.
	Motor Poles	Set the correct number of motor poles to get the correct Boost RPM trigger threshold. At the same time, players can see the correct motor RPM in the real-time data of the mobile phone APP.
	Running Mode	Running mode includes Forward/Brake, Forward/Brake/Reverse, Forward/Reverse.
	Reverse Mode	Check the below diagram for details
	Drive PWM Freq.	The drive PWM frequency refers to the PWM frequency used when the ESC drives the motor. The lower frequency, the higher acceleration, but the linearity of the throttle becomes worse and feel aggressive throttle feeling. The Higher frequency ,the smoother throttle feeling, but it will cause the temperature of the ESC to rise too fast.
	Cutoff Voltage	If the ESC detected the voltage less than the set value at anytime, and this voltage keep for a while, then the low voltage protection is activated, and the maximum throttle output will be limited within 50%.(Once the low voltage protection activated, even though the voltage comes back to normal, the protection can not be relieved.)
	Cutoff Thermal	The output throttle from the ESC will be limited (not over 50%) with the thermal value you have preset. (The Thermal protection will be dismissed when the ESC temperature drop to 65℃)
	BEC Output	BEC output

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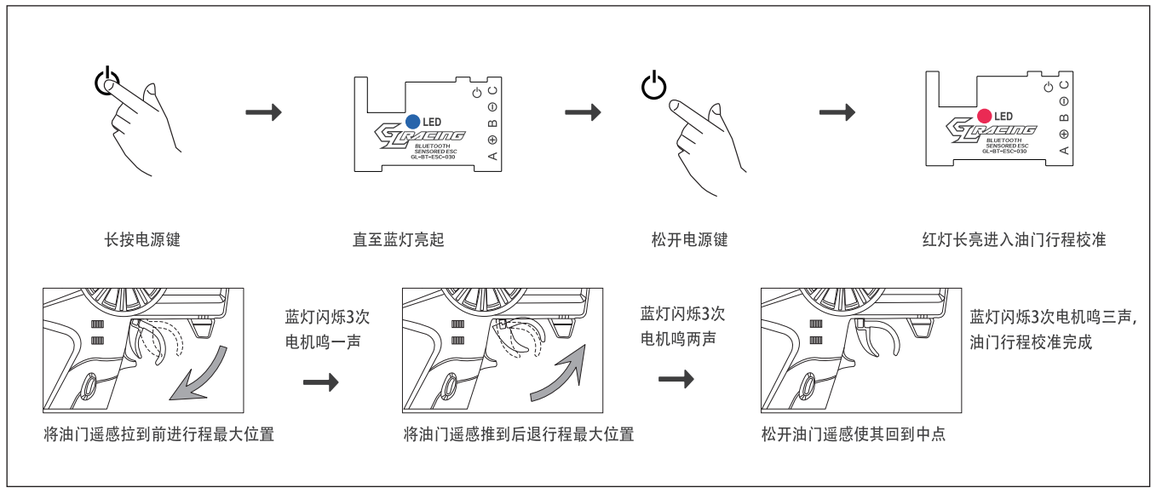
1.油门较准



2.安卓和苹果APP

安卓APP下载步骤：

1.用浏览器扫描右方二维码，下载APP安装包。

2.安装APP(ESC1)后，打开APP，并允许所有权限即安装成功。

3.打开手机GPS和蓝牙，进入ESC1 后点击CONNECT选择电调蓝牙并连接。

苹果APP下载步骤:

1.用“ESC1”在苹果APP商城搜索或者扫描右方二维码，找到后点击获取然后安装。

2.安装APP(ESC1)后，打开APP，并允许所有权限后安装成功。

3.打开手机GPS和蓝牙，进入ESC1 后点击CONNECT选择电调蓝牙并连接。

注: 电调蓝牙出厂默认连接密码为：0000。(开机状态下长按电源键约10秒，可恢复出厂默认密码。)

3.可编程项描述

类别	设定项名称	设定项说明
油门	油门响应（Throttle Response）	表示电调多长时间进行一次油门调节。
	油门缓降（ Coast）	指当油门值从大到小变化时，其每0.01秒的减少量。例如：当前油门摇杆在80%位置，下一时刻在30%位置，若未开启油门缓降，油门值立即从80%减到30%，若开启，油门值按80%、70%..30%如此缓慢下降。注意：若下一时刻油门摇杆在0%位置，则油门值立即等于0。这一项只在前进油门行程范围内起作用,30%缓降作用最明显。
	油门中点宽度（Neutral Range）	油门摇杆处于回中状态的范围大小。
	最小油门值（Min. Throttle）	限制油门值不能太小，这一项根据车量配置来调节，越小越轻的车这一项可以调小，以使车量获得很低的速度，越大越重的车调大，可以消除因启动力量不足造成的抖动。
	油门衰减（Minus）	例如：油门摇杆在20%位置，若未开启衰减，输出油门值是20%，设置为1%衰减后，输出油门值为20% * (1-1%) = 19.8%。这一项只在拉油门起作用。
	油门衰减作用范围（Minus Range）	比如设置为50%，代表50%以下的油门行程做油门衰减。这一项只拉油门起作用。
	最大前进力度（Max. Forward force）	若设置为80%，则拉油门到100%位置时实际油门值是80%。
	最大倒车力度（Max. Reverse force）	若设置为80%，则推油门到100%位置时实际油门值是80%。
刹车	刹车响应（Brake Response）	表示电调多长时间进行一次刹车调节。
	最小刹车力度（Min. Brake Force）	限制刹车力度的最小值。
	最大刹车力度（Max. Brake Force）	如果最小刹车力度设置得比最大刹车力度大，则最大刹车力度等于最小刹车力度。
	前进拖刹力度（Fwd. Drag Brake Force）	车辆前进后，油门摇杆从前进行程回到0%位置时的刹车力度，若开启，油门摇杆在0%位置处电调开启对应刹车力度。
	前进拖刹响应（Fwd. Drag Brake Response）	表示电调多长时间进行一次拖刹调节。
	倒车拖刹力度（Rev. Drag Brake Force）	车辆后退后，油门摇杆从后退行程回到0%位置时的刹车力度。
	倒车拖刹响应（Rev. Drag Brake Response）	表示电调多长时间进行一次拖刹调节。
	刹车PWM频率（Brake PWM Freq.）	刹车PWM频率
BOOST 进角	Boost进角（Boost Timing）	开启进角，使电机获得更高转速。
	触发方式（Trigger）	分为油门触发和转速触发。
	油门触发阈值（Throttle Threshold）	例如 Boost进角设置为30度，50%油门阈值触发Boost，则油门摇杆达到50%位置处开启Boost进角，在油门摇杆达到100%处开启30度进角，50%到100%油门间进角直线性增加。
	转速触发阈值（RPM Threshold）	电机达到转速阈值后，设置的Boost角度将全部开启。
	初始角度（ Initial Angle）	例如设置Boost进角设置为30度，50%油门触发Boost，初始角度为2度，当油门在50%处，Boost实际角度是2度（如果初始角度设置的比Boost进角大，那么最终角度是Boost进角设置值）。
	进角值增加的速度（Angle Inc. Rate）	例如设置Boost进角设置为30度，油门触发Boost，如果油门值是瞬间增加到100%的，则Boost进角不会立即达到30度，而是以设定的增加速度加到30度；设置为转速触发时同理。
	进角值减小的速度（Angle Dec. Rate）	当Boost触发条件不再满足时，Boost进角减到0的速率。
TURBO 进角	Turbo进角（Turbo Timing）	指拉油门达到100%开始开启的进角。
	进角值增加的速度（Turbo Inc. Rate）	参考“Boost进角值增加的速度”。不同的电机，增加速度设置的过快，会有瞬间大电流，且电机振动剧烈。
	进角值减小的速度（Turbo Dec. Rate）	当油门摇杆离开100%位置处时，Turbo开启的条件不再满足，但Turbo进角不会立即减到0，而是以设定的速度减少。Turbo开启时电机转速很快，如果此时Turbo进角值快速减到0，则转速下降太快，电机会有剧烈震动和反向高压，因此请选择合适的进角减小速度。
	延迟（ Delay）	指拉油门达到100%后延迟一段时间再开启Turbo。
	延时的更新时间点(Delay Reload)	当进角已经触发，如果油门离开100%，又快速回到100%时，是重新延时还是不延时。wait：等到进角减小到0后再更新delay，然后才重新延时；instant：油门一离开100%就更新delay，立即开始重新延时.
一般设置	电机旋转方向（Motor Rotation）	某些车架在默认转向下，前进、后退都是相反的，此时设置另一个电机旋转方向可以纠正这种错误。
	电机极对数（Motor Poles）	设置正确的电机极对数，才能得到正确的Boost转速触发阈值，同时玩家才可以在手机APP实时数据中看到正确的电机转速。
	运行模式（Running Mode）	分为前进/刹车，前进/刹车/后退,前进/后退。
	倒车模式（Reverse Mode）	详细见下图
	驱动PWM频率（Drive PWM Freq.）	指电调驱动电机旋转时使用的PWM的频率。频率低加速快，但是油门线性变差，频率越高油门越细腻，但是会增加电调开关损耗，导致电调温升过快。
	低压保护（Cutoff Voltage）	任何时候电调检测到电压低于设置值，并保持一段时间，电调开启低压保护，限制输出油门，输出油门值不会超过50%（低压保护激活后，即使电压回到正常范围内也不能解除）。
	高温保护（Cutoff Thermal ）	温度大于设定值时，电调开启温度保护，限制输出油门，输出油门值不会超过50%（温度降低到65度以下，解除温度保护）。
	BEC输出电压（BEC Output）	BEC输出电压