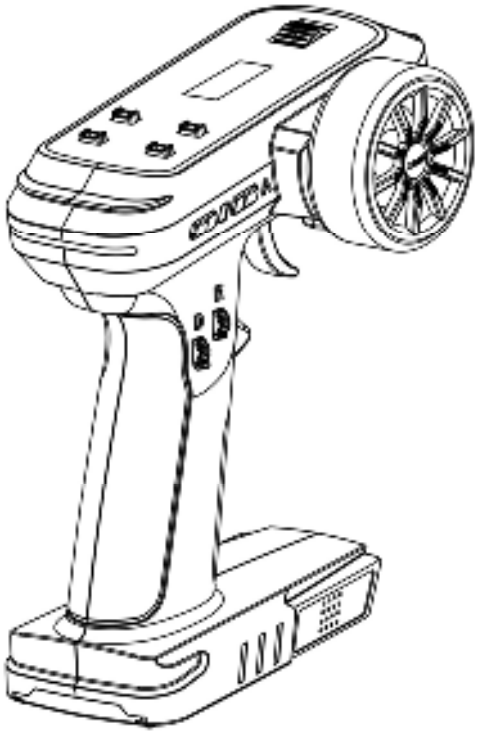
LDARC O:
TELEMETRY SYSTEM

CT01 遥控器



FCC ID:2BAKSCT01
Model:CT01

第二页中文

ENGLISH PAGE 7

版本 21208

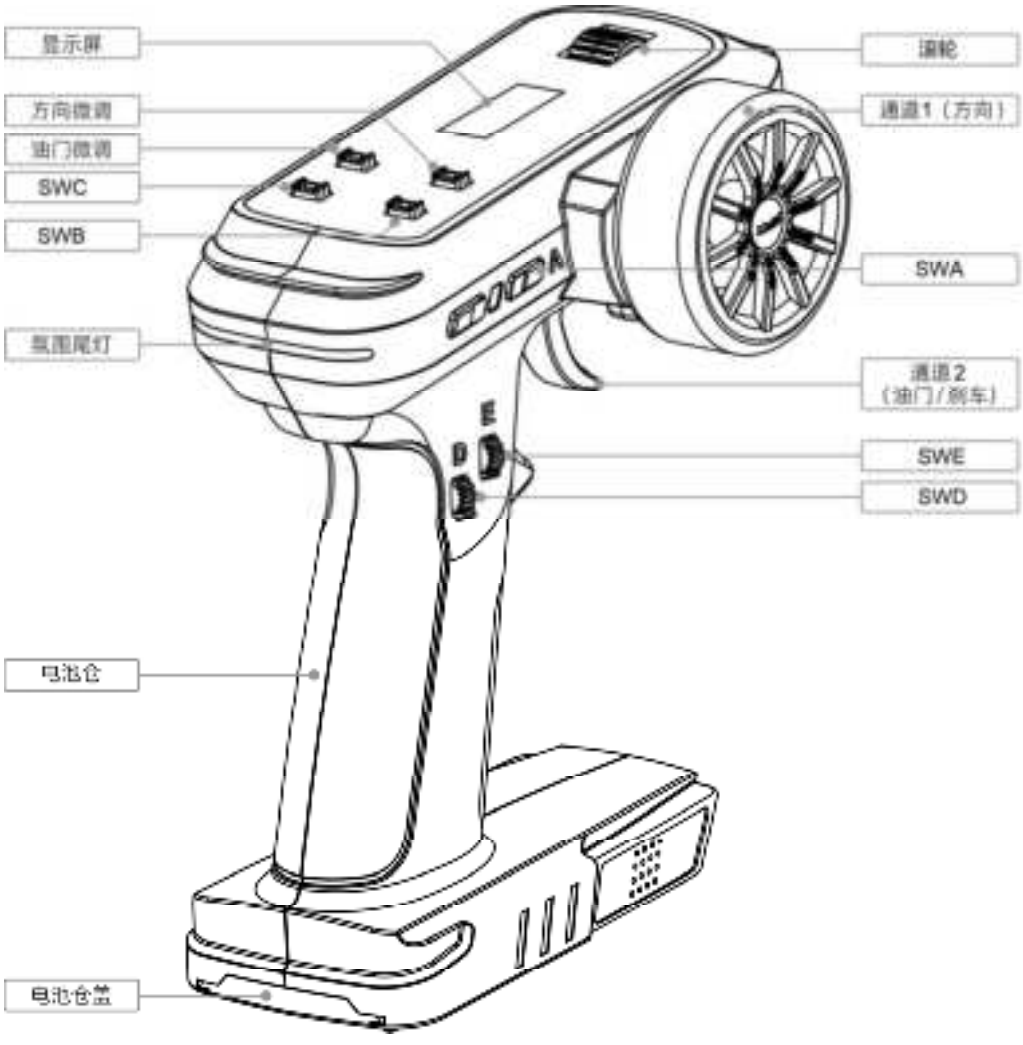
CT01 遥控器使用说明书

- LDARC O_2双向 2.4Ghz 无线协议
- 遥测(回传)动力电池电压，支持自定义电压报警值
- 8 通道输出，内建 5 组模型文件
- 6 个开关通道全部支持输出值自定义
- 震动和声音报警
- 支持双路履带(坦克)模式
- 按键灯光支持白色、彩色或关闭
- 遥控器固件升级
- 中英文菜单界面
- 接收机实时信号强度指示，支持信号连接和断开提醒
- 除转向和油门之外的其他 6 个开关通道全部支持重映射
- 8 通道独立失控保护设置
- 可拆卸 18650 电池，标准 USB Type-C 充电接口
- 个性化氛围尾灯
- 50Hz / 100Hz / 200Hz 舵机速度

警告

- 本产品不是玩具，用户需要有航模操作经验，错误的使用可能造成人身伤害和设备损坏，使用前请仔细阅读说明书，我们不承担因使用本产品而引起的任何责任。
- 禁止在雷雨等恶劣环境下使用本产品。
- 对码时请断开电调与接收机的连接，防止马达错误启动产生危险。
- 当接收机和遥控器距离较远、有障碍物遮挡、使用环境内存在无线电干扰等情况下，接收机可能存在失控风险，务必根据实际场景设置合理的失控保护值，请拆除马达动力输出的机械齿轮，在确保安全的前提下，关闭遥控器电源以验证失控保护是否正确执行。

功能



电池和充电

■ 安装电池：打开电池舱盖，按照上图标注的极性安装电池，本产品只支持锂离子或锂聚合物 18650 尖头电池，充电限制电压 4.2V，放电截止电压 3.5V±0.1V。

■ ①：充电时红色指示灯点亮，充电结束指示灯熄灭。

■ ②：电源开关 ON 位置开机，OFF 位置关机。

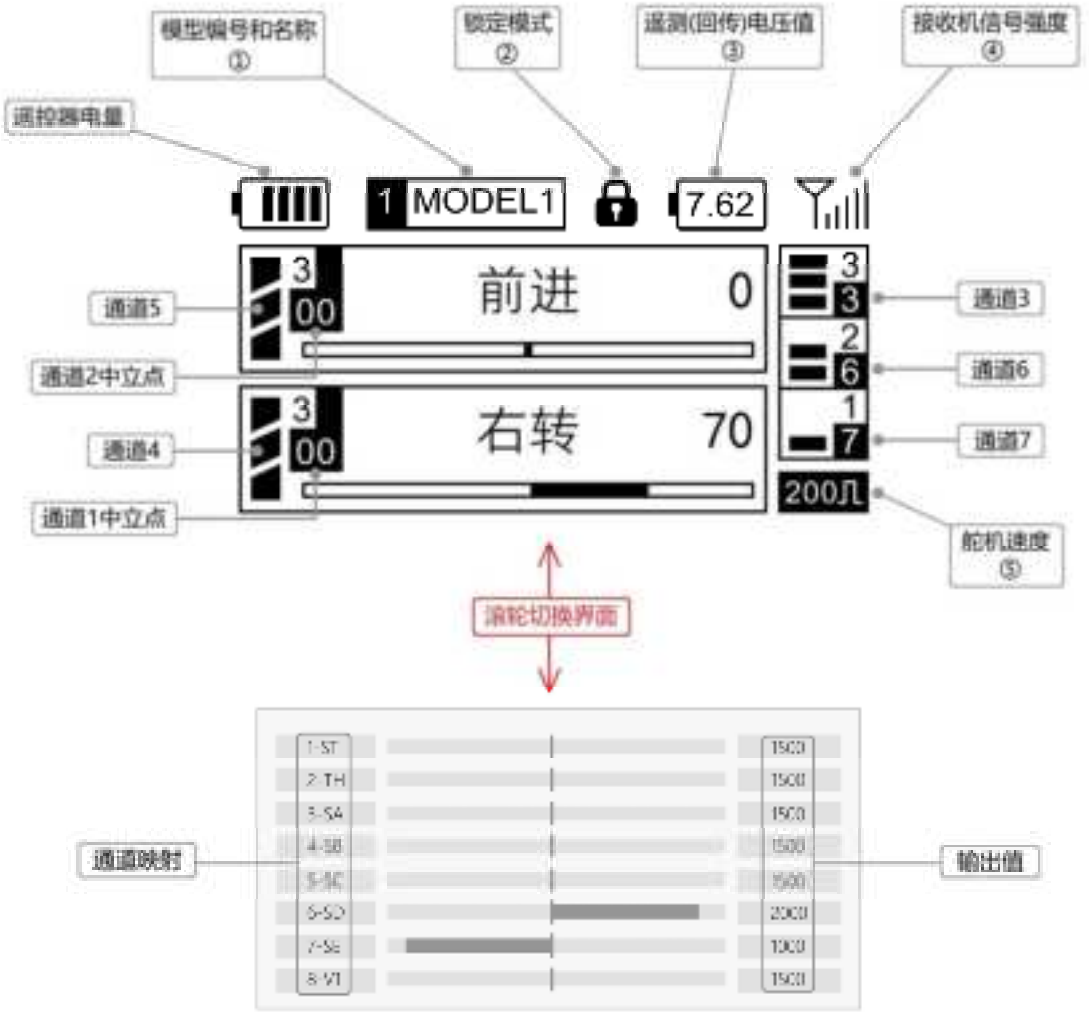
■ ③：标准 USB Type-C 充电接口，可直接使用市面绝大部分手机充电器、氮化镓充电器或者充电宝。

■ 注意！给劣质、受到过剧烈冲击、有机械形变或过放电的电池充电可能存在起火风险，充电时建议有人值守。

■ 本产品充电电流是 600mA，如果用户使用 1200mAh 容量的电池充满大约需要 2 小时，2400mAh 容量充满大约需要 4 小时。

■ 使用少部分老式电脑的 USB 口或者通过 USB 集线器充电时，可能因为供电电流不足导致充电时间过长甚至无法充满。

主页



■ 遥控开机后进入上图的<主页>界面，使用滚轮可以在两个界面之间切换。

■ ①：当前运行的模型文件编号和名称，请见第 5 页<菜单功能预览>中的功能说明栏。

■ ②：主界面按住滚轮 3 秒不放，可以将主界面解锁或锁定。

■ ⑤：实时遥测(回传)电压值显示，电压报警设置方法见第 6 页<遥测设置>。

■ ④：接收机信号强度，遥控器支持接收机信号连接和断开提醒，设置方法见第 6 页<遥测设置>。**注意！当接收机特别靠近遥控器时(大约 0.1 米 ~ 2 米左右)会关闭天线，导致遥控器上显示的信号强度在接收机特别近时反而下降，这属于正常现象请不用担心。**

■ ⑤：接收机输出的 PWM 舵机速度，设置方法见第 5 页<菜单功能预览>中的功能说明栏。

菜单功能预览

■ <模型设置>是编号 0/1/2/3/4 共五组模型文件的设置页面，菜单栏红字的 M0 代表当前运行的模型文件。

遥控器设置 M0	→	模型设置 M0	功能说明
退出		退出	
English		模型编号 0	切换模型文件，编号 0/1/2/3/4 共五组
模型设置		模型名称	自定义名称
高级设置		方向设置	CH1 方向通道的反向、行程和辅助微调
关于		油门设置	CH2 油门通道的反向、行程和辅助微调
		通道重映射	SWA/B/C/D/E 和虚拟电位器通道 SV1 共 6 个开关通道的重映射设置
		按键自定义	定义开关通道的档位输出值，最大和最小设置值就是行程极值，请阅读蓝字的 #注意事项
		失控保护	见本页<失控保护>
		舵机速度 50	设置接收机输出的 PWM 舵机速度
		遥测设置	见第 6 页<遥测设置>
		尾灯设置	自定义尾灯颜色和亮度
		遥控器模式	<普通车控>或<双路履带(坦克)>模式切换

注意事项：

■ SWA/B/C 是三档开关，用户可自定义三个档位的数值，数值范围是 900us ~ 2100us。

■ SWD 是两档开关，用户可自定义两个档位的数值，数值范围同上。

■ SWE 是触发开关，客户可设置两个数值，按下时发送一个值，松手发送另外一个值，数值范围同上。

■ SV1 是虚拟电位器通道，客户直接设置虚拟电位器的输出值，数值范围同上。

■ <高级设置>菜单是遥控器硬件相关的设置。

遥控器设置 M0	→	高级设置 M0	功能说明
退出		退出	
English		开遥测对码	见第 6 页<对码>
模型设置		关遥测对码	
高级设置		屏幕亮度	LCD 背光亮度，设置为 0 可以关闭背光
关于		屏幕对比度	LCD 显示对比度，用户根据观感调节
		按键灯颜色	按键指示灯<彩色>或者<白色>模式
		按键灯亮度	按键指示灯亮度，设置为 0 可以关闭按键灯
		校准遥控器	重新校准遥控器方向轮和油门扳机
		恢复出厂设置	重置所有遥控器设置和模型文件到出厂值，恢复出厂设置后需要执行<校准遥控器>操作

〈失控保护〉

■ <失控保护>设置菜单，请仔细阅读功能说明栏中关于失控保护设置的说明。

遥控器设置 M0	→	模型设置 M0	→	失控保护 M0
退出		退出		退出
English		模型编号 0		CH-1 停止
模型设置		模型名称		CH-2 停止
高级设置		方向设置		CH-3 保持
关于		油门设置		CH-4 保持
		通道重映射		CH-5 保持
		按键自定义		CH-6 保持
		失控保护		CH-7 保持
		舵机速度 50		CH-8 保持
		遥测设置		
		尾灯设置		
		遥控器模式		

功能说明
失控保护支持<保持>、<停止>、<数值自定义>三种模式
■ <保持>模式：当失控发生时保持输出最后的 PWM 信号输出不变，该功能一般用于普通开关通道，用于车门、大灯等辅助控制。
■ <停止>模式：当失控发生时无信号输出，将失控时的控制权下放给连接的设备。该功能一般用于电调，使用前请仔细阅读电调说明书确保使用安全。
■ <数值自定义>模式：当失控发生时输出用户自定义的 PWM 信号值，该功能仅限专家，请谨慎使用。
注意事项：
■ 务必根据实际场景设置合理的失控保护值，请拆除马达动力输出的机械齿轮，在确保安全的前提下，关闭遥控器电源以验证失控保护是否正确执行。
■ 失控保护和舵机速度设置结束后接收机需要最多 20 秒才能执行设置参数。
■ 接收机刚上电时所有通道全都是 50Hz 舵机速度输出，一旦接收到遥控器信号将按照用户设置的舵机速度和失控保护工作，此过程同样需要最多 20 秒。

〈遥测设置〉

■ 接收机遥测(回传)电压报警设置、信号连接和断开提醒等功能设置。

遥控器设置		模型设置		遥测设置		功能说明
退出		退出		退出		
English		模型编号		连接提醒	启动	接收机连接或断开时遥控器震动和蜂鸣提醒
模型设置		模型名称		低压报警	关闭	当遥测电压低于设置时遥控器震动和蜂鸣提醒
高级设置		方向设置		报警电压	74	遥测报警电压值，是否报警取决于<低压报警>
关于		油门设置		电压补偿	0	如果遥测显示电压与实际有偏差，此处可微调
		通道重映射				
		按键自定义				
		失控保护				
		舵机速度				
		遥测设置				
		尾灯设置				
		遥控器模式				

注意：<报警电压>是串联总电压的最低允许值，遥控器并不知道串联了几节电池，也不知道电池类型，客户需要根据实际使用情况设置总电压的最低<报警电压>。

〈对码〉

■ 遥控器中<对码>的菜单所在位置

遥控器设置		高级设置
退出		退出
English		开遥测对码
模型设置		关遥测对码
高级设置		屏幕亮度
关于		屏幕对比度
		按键灯颜色
		按键灯亮度
		校准遥控器
		恢复出厂设置

■ 接收机上电 10 秒内，按住<BIND>按钮不放直到指示灯绿蓝快速闪烁，表示接收机已经进入对码模式。在遥控器<遥控器设置>，<高级设置>菜单中选择<开遥测对码>或<关遥测对码>，分别对应接收机的<遥测启动>或<遥测关闭>模式，接收机对码成功后指示灯将变为红蓝慢闪或红绿慢闪，此时遥控器退出对码菜单，接收机需要重新上电才会正常工作。接收机指示灯的具体含义请参照接收机说明书。

■ <开遥测对码> & <遥测启动>模式：接收机与遥控器是双向通讯，接收机把遥测(回传)电压值发送到遥控器上，用户可以在遥控器设置报警电压值。遥控器内每个模型文件可以与多个<遥测启动>模式的接收机对码绑定，但用户必须保证同一时刻只有一个接收机上电启动，因为多个<遥测启动>模式的接收机同时工作将导致遥测(回传)数据包混乱。

■ <关遥测对码> & <遥测关闭>模式：接收机与遥控器是单向通讯，此时遥控器无法查看接收机的遥测(回传)电压和信号强度。

注意事项：

■ 使用 LDARC O_2无线协议的 CT 系列遥控器内每个模型文件都拥有唯一 ID。该功能可保证接收机对码时是与遥控器内的模型文件绑定，即使是同一台遥控器，没有与当前模型文件对码绑定的接收机将处于失控状态。

参数

电气性能

■ 工作电压：3.5V ~ 4.2V
■ 额定电流：小于 90mA (关闭所有灯光)
■ 额定电流：小于 300mA (所有灯光最大亮度)
■ 充电电流：600mA
■ 重量：240g(不含电池)

LDARC O_2 协议

■ 无线数据包刷新时间 ：7.5ms
■ 通讯码率 ：1Mbps
■ 通道数据分辨率 ：11bit (2048)
■ PWM 输出范围 ：900us ~ 1500us ~ 2100us

8 通道硬件定义

■ 2 个线性通道 ：转向和油门
■ 3 个三档开关通道 ：SWA、SWB、SWC
■ 1 个两档开关通道 ：SWD
■ 1 个触发开关通道 ：SWE
■ 1 个虚拟电位器通道 ：SV1

LDARC O_2无线协议支持的产品：

■ 雷迪安 CT 系列遥控器
■ 雷迪安 CR 系列接收机
■ 雷迪安 X43 微型桌面越野车
■ 雷迪安 M58 微型大脚车

WWW.LDARC.COM

雷迪安

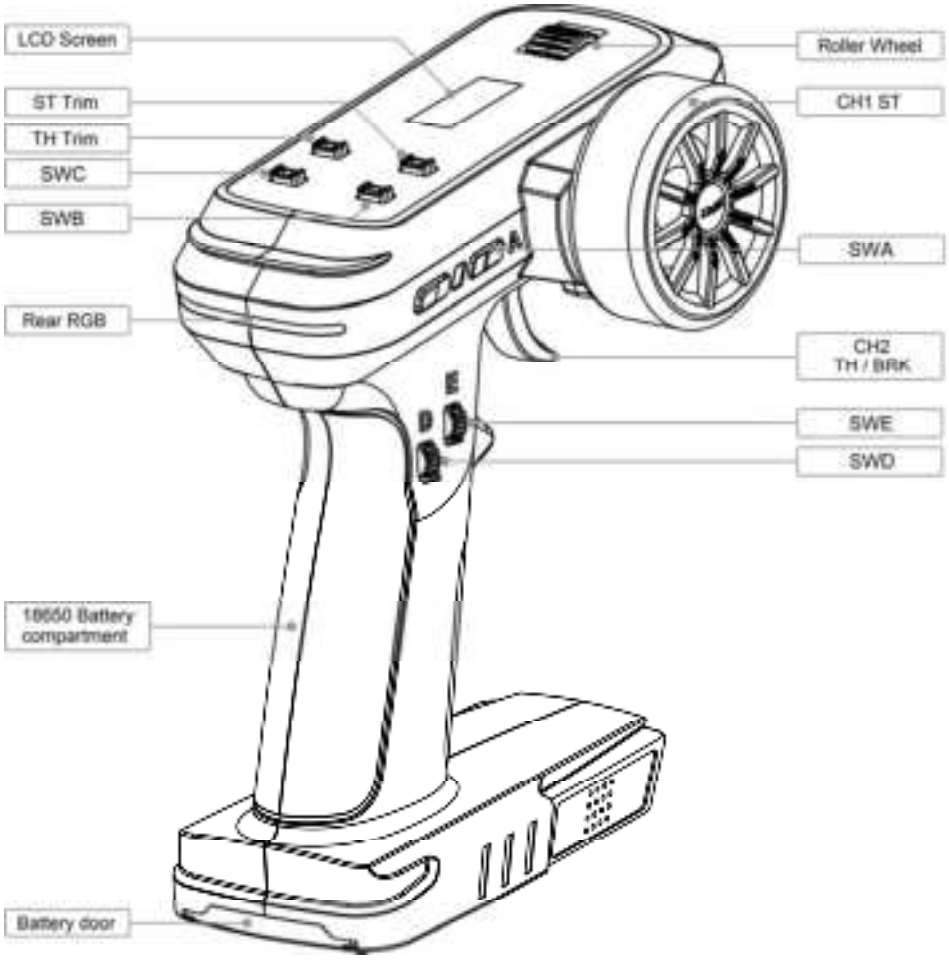
CT01 TRANSMITTER USER MANUAL

- **LDARC O_2** bidirectional 2.4Ghz wireless system
- Telemetry voltage for main battery, custom alert voltage
- 8 channels output, 5 model files
- 6 SW channels all support custom output PWM value
- Sound and vibration warning
- Support dual tracks (tank) mode
- Backlight of key support white / color / lights out mode
- Transmitter support firmware update
- English and Chinese language menu
- Wireless signal strength indication, receiver connect / disconnect alert
- 6 SW channels all support channel remap
- 8 channels independent failsafe setting
- Detachable 18650 battery, standard USB Type-C charging interface
- Custom RGB rear light
- 50Hz / 100Hz / 200Hz servo speed

WARNING

- This product is not a toy, user need model hands-on experience. Please be careful when using, we do not assume responsibility for any property damage or personal injury caused by use this product.
- **DO NOT** using in thunderstorm, bad weather and harsh environments.
- Remove ESC and motor before run binding procedure or else may result in serious injury.
- Receiver maybe lost signal when the distance too far, sheltered by barrier or radio interference. Use reasonable failsafe setting, under the premise of ensuring safety, remove motor gear then power off transmitter to test failsafe working properly or not.

FUNCTION



BATTERY & CHARING

■ **Installing battery : remove the battery door from the bottom of the transmitter, install battery as shown. ONLY use Li-ion or Li-pol POINTED end 18650 battery, charging voltage 4.2V maximum.**

■ ① : Red indicator on when charging, light off when charging finished.

■ ② : ON position power-up, OFF position power-off.

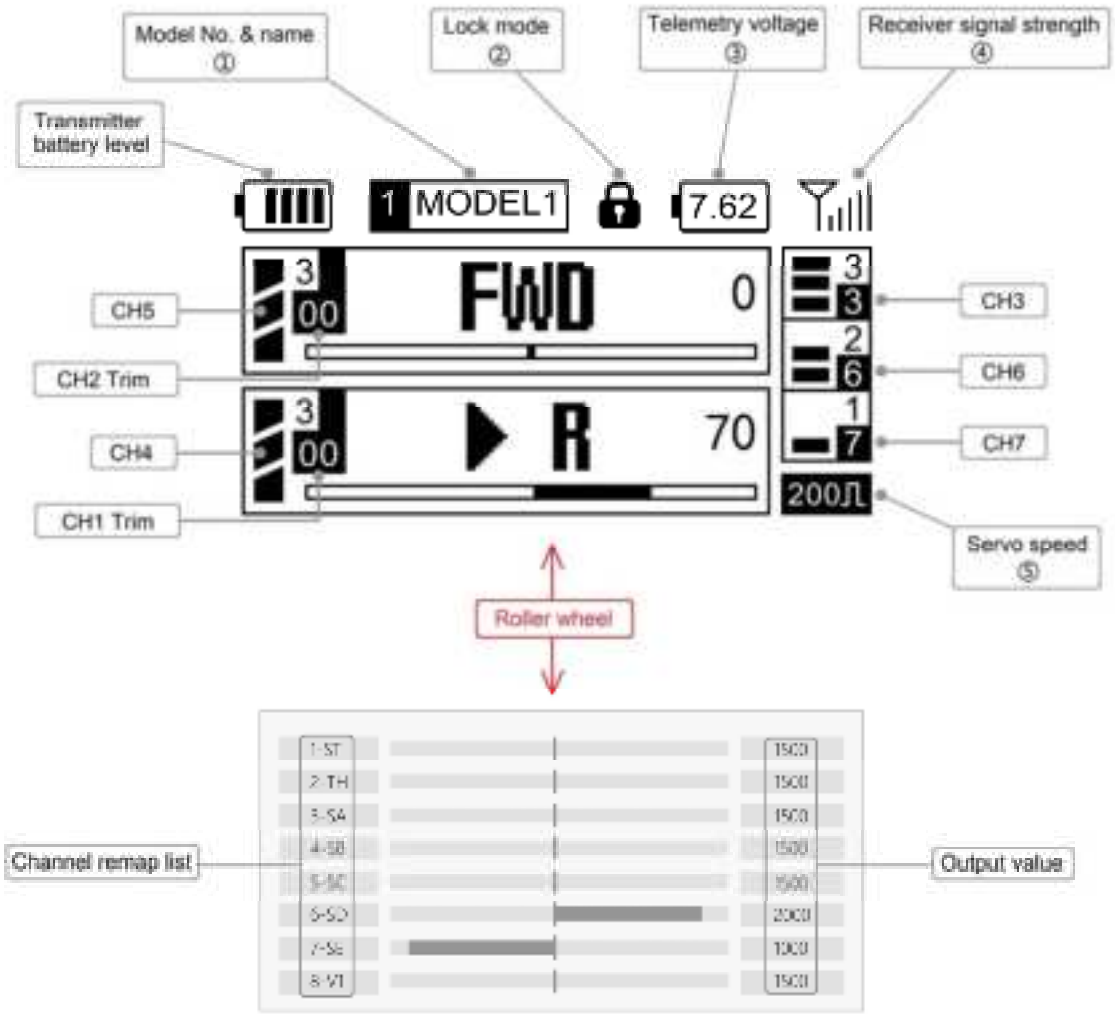
■ ③ : Standard USB Type-C charging interface can use most of mobile phone charger like normal USB charger, GaN charger or mobile power supply (Charge Pal).

■ **Warning! Risk of explosion if use inferior, mechanical deformation, over discharge battery.**

■ Transmitter charging current 600mA, fully charged need about 2 hours if use 1200mAh capacity battery, about 4 hours if use 2400mAh battery.

■ When charging using some old computer or USB hub, maybe cannot fully charged because current limit, please use mobile phone charger.

MAIN MENU



■ Transmitter will into <Main menu> after power-up, use roller wheel can switch between 2 page above.

■ ①： Current running model file number and name, more information see page 10 <MENU PREVIEW>.

■ ②： Press roller wheel and hold 3 seconds can lock or unlock main menu.

■ ③： Telemetry voltage value display, low voltage alert setting see page 10 <TELEMETRY>.

■ ④： Wireless signal strength level, receiver connect / disconnect alert setting see page 10 <TELEMETRY>. Notice: receiver will turn antenna off when very close to transmitter (about 0.1 ~ 2.0 meters), this leads to the display signal strength level down, its normal no need to worry about.

■ ⑤： Servo speed, more information see page 10 <MENU PREVIEW>.

MENU PREVIEW

■ <Model Setting> is the setting page of five model files numbered 0/1/2/3/4, the red M0 on menu bar indicate the current running model file.

Setting M0
Exit
切换到中文
Model
Advanced
About

→

Model Setting M0	Functional specifications
Exit	
Model No. 0	Switch current running model file, number 0/1/2/3/4 total five model files
Model Name	Custom model file name
ST Setting	CH1 ST channel reverse, end point and sub trim
TH Setting	CH2 TH channel reverse, end point and sub trim
CH Remap	Remap define of SWA/B/C/D/E and SV1
SW Custom	Define SW channel output value, please read blue words #Notice below
Failsafe	See <FAILSAFE> this page
Servo SPD 50	Setting receiver output servo speed (PWM speed)
Telemetry	See page 10 <TELEMETRY>
RGB	Custom RGB rear light color and brightness
TX Type	<Normal car> or <Dual tracks (tank)> mode

 # Notice:

■ SWA/B/C are 3 gears structure, user can define 3 different output values, range is 900us ~ 2100us.

■ SWD are 2 gears structure, user can define 2 different output values, range same as above.

■ SWE is trigger structure, user can define 2 different output values, hold SWE will sent one value, release will sent another, range same as above.

■ SV1 is virtual potentiometer, user can define potentiometer output values, range same as above.

■ <Advanced> is the setting page related to transmitter hardware.

Setting M0
Exit
切换到中文
Model
Advanced
About

→

Advanced M0	Functional specifications
Exit	
Bind TLM-On	See page 11 <BIND>
Bind TLM-Off	
LCD-BRT	LCD backlight brightness, turn off backlight if set to 0
LCD-Contrast	LCD contrast
SW-Color	The LED of SW key <Color> or <White> mode switch
SW-BRT	The LED of SW key brightness, turn off LED if set to 0
Calibration	Recalibration the ST and TH channels
Reset	Reset to the factory default, user need perform <Calibration> after <Reset>

<FAILSAFE>

■ <Failsafe> menu, please read functional specifications below carefully before setting.

Setting M0
Exit
切换到中文
Model
Advanced
About

→

Model Setting M0
Exit
Model No. 0
Model Name
ST Setting
TH Setting
CH Remap
SW Custom
Failsafe
Servo SPD 50
Telemetry
RGB
TX Type

→

Failsafe M0	
Exit	
CH-1	STP
CH-2	STP
CH-3	HLD
CH-4	HLD
CH-5	HLD
CH-6	HLD
CH-7	HLD
CH-8	HLD

Functional specifications
Failsafe support <HOLD>、<STOP> and <Value Custom>
■ <HOLD>：receiver will keep the last PWM output when signal lost, usually used for normal SW channels, like car door and light control.
■ <STOP>：receiver will stop PWM output (no PWM output) when signal lost, the failsafe will "pushed down" to the device connect to this channel. Usually used for ESC, please read ESC manual carefully to ensure safe operation.
■ <Value Custom>：receiver will output custom PWM value when signal lost, for expert use only.
Notice：
■ Use reasonable failsafe setting, under the premise of ensuring safety, remove motor gear then power off transmitter to test failsafe working properly or not.
■ After setting failsafe and servo speed on the transmitter, receiver perform user setting not more than 20 seconds.
■ All the channels of receiver will keep 50Hz PWM output after power on, receiver perform the failsafe and servo speed setting not more than 20 seconds after receiving signals.

<TELEMETRY>

■ Telemetry voltage and receiver connect / lost alert setting.

Setting M0
Exit
切换到中文
Model
Advanced
About

→

Model Setting M0
Exit
Model No. 0
Model Name
ST Setting
TH Setting
CH Remap
SW Custom
Failsafe
Servo SPD 50
Telemetry
RGB
TX Type

→

Telemetry M0		Functional specifications
Exit		
C / L Alert	ON	Buzz & vibration when receiver connect or lost
LV Alert	OFF	Buzz & vibration when telemetry voltage below <LV setting>
LV setting	74	Telemetry low voltage alert value
Offset	0	Adjust the telemetry voltage between real battery voltage

Notice: <LV setting> value is the total voltage of serial battery, transmitter don't know how many cells in serial battery, also don't know battery type. User need set the telemetry low voltage alert value depend on actual situation.

<BIND>

■ Bind function in transmitter menu.

Setting M0
Exit
切換到中文
Model
Advanced
About

→

Advanced M0
Exit
Bind TLM-On
Bind TLM-Off
LCD-BRT
LCD-Contrast
SW-Color
SW-BRT
Calibration
Reset

■ Power on the receiver then press the <BIND> key within 10 second until **green** **blue** LED fast blink meaning receiver in bind mode. Select the <Bind TLM-On> or <Bind TLM-Off> option on the transmitter <Setting>, <Advanced> menu, respectively to the receiver's <TELEMETRY ON> or <TELEMETRY OFF> mode. Receiver will **red** **blue** slow blink or **red** **green** slow blink after bind success. User need exit transmitter from bind menu and cycle receiver power. The LED meaning please refer to receiver manual.

■ <Bind TLM-On> & <TELEMETRY ON> mode : Bidirectional communication between transmitter and receiver, receiver will send telemetry packet to transmitter, user can set the alert voltage value on the transmitter. One model file on the transmitter can bind more than one <TELEMETRY ON> mode receiver, but user need keep ONLY ONE receiver power on at the same time, because more than one <TELEMETRY ON> mode receiver working in parallel will results in telemetry packet error.

■ <Bind TLM-Off> & <TELEMETRY OFF> mode : One-way communication between transmitter and receiver, user can't view the telemetry data and signal strength on transmitter.

Notice:

■ The CT series transmitter use LDARC O_2 wireless system, each model file of transmitter have unique ID. This feature lets receiver bind to model file instead of transmitter. **If receiver does not bind to current running model file will go to failsafe mode, even when use the same transmitter.**

SPECIFICATIONS

Electrical performance

■ Operating voltage : 3.5V ~ 4.2V

■ Operating current : less than 90mA (all light off)

■ Operating current : less than 300mA (all light maximum brightness)

■ Charging current : 600mA

■ Weight : 240g (not include battery)

LDARC O_2 wireless system

■ Wireless packet refresh time : 7.5ms

■ Communication data rate： 1Mbps

■ Channel resolution： 11bit (2048)

■ PWM maximum range : 900us ~ 1500us ~ 2100us (±125%)

8 channels hardware define

■ 2 linear channels : ST and TH

■ 3 channels with 3 gears : SWA、SWB、SWC

■ 1 channel with 2 gears : SWD

■ 1 trigger channel : SWE

■ 1 virtual potentiometer channel : SV1

LDARC O_2 wireless system support:

■ **LDARC CT series transmitter**

■ **LDARC CR series receiver**

■ **LDARC X43 micro off-roader**

■ **LDARC M58 micro monster truck**

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FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

* RF warning for Portable device:
The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.