

# **Telemetry Display**

**Remote control model telemetry system**



***operating instruction***

## 【Item include】



Transmitter



RPM sensor



Temperature sensor

## 【Function introduction】

1. Wireless monitoring.
2. Wireless alarm.
3. Real-time RPM.
4. Real-time temperature.
5. Real-time current.
6. Real-time voltage.

## 【The system function menu】

### 3.1. Receiver: All functions of receiving information, display, process.

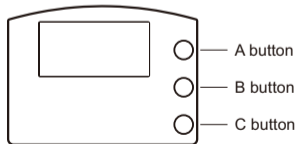
- 1). Operating voltage: 4 ~ 9V.

A button: Frequency hopping scanning start button.

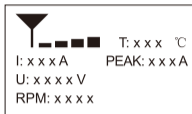
B button: Obtaining and checking data button.

C button: LCD flip display button.

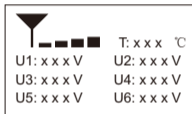
Signal lamp LED: It will flash when receive signal and keep long bright when can't receive signal.



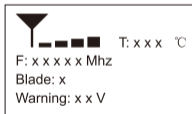
2). LCD display: (Short press C button once then flip one page)



After power on, it will show the default on the first page: Signal strength, temperature, current (I), peak current (PEAK), whole voltage (U), revolutions per minute (RPM).



The second page displays: Signal strength, temperature (T), 6 cells' voltage (U1-U6).

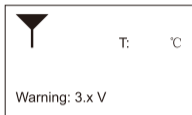


The third page displays: Signal strength, temperature (T), current channel frequency (F), Blades value, low voltage alarm value (warning).

**Notes: The Signal strength and the temperature values wouldn't display, and the voltage current, RPM and blade value would show 0 when it doesn't receive any signals.**

3). Set low voltage alarm value:

- (1). Press A button and B button at the same time for more than 3s to enter the setup Status as following picture, then short press the C button to set up the voltage value (set up range: 3.0V-3.8V).



The signal strength and temperature value don't display if can't receive signal.

- (2). Short press A button to exit low voltage setting up.

4). Channel setting of the receiver:

Press A button of the receiver for more than 3 seconds, then it will show a value on the first page of LCD which indicates the channel value (For example: 441.06 Mhz [2], indicates the current channel is 2). Then short press B button to change channel frequency, everytime short press B button once then change one channel. Press A button of the receiver for more than 3 seconds to confirm and exit the setting. (Please refer to the subsequent frequency hopping setting steps)

5). Signal frequency receiving range:

433 MHz Frequency band receiving modules: 434.06 MHz-504.06 MHz, divided into 11 Frequency channels and the neighbouring channels differ 7 MHz.

6). In normal work, current < 20 mA; when the buzzer alarm, current < 150 mA.

**3.2. Transmit board:**

- 1). Functions: Voltage, current detecting test, temperature detecting, rotational speed detection and wireless data transmission.

Specifications: ①. Voltage detection range: 2-6 cells of LiPo/LiFe/LiIo batteries, but the voltage sum of the first and second battery can not be under 4V. Average error detection +/- 10 mV.

②. Current detection range: 0-30A, average error: +/- 0.1A.

- ③. Temperature detection range:  $-10^{\circ}\text{C}$  -  $+100^{\circ}\text{C}$ .
- ④. RPM detection range: 0 - 999999 r/min.
- 2). Power consumption: Normal work power current  $< 30$  mA.
- 3). LED working state: LED flashing time indicates the value of current transmit channel value, in the normal working state. For example, LED flashes 6 times in every 2 seconds, that means the transmit frequency is in the sixth channel.
- 4). Blade value setup: Press KEY 2 button for more than 3s to enter setup state, now LED long bright. Then short pressing KEY 2 once the values will add one (the current values can be seen on LCD display of the receiver), and it can set 9 blades at most. After setting up, short press KEY 1 button to exit.
- 5). Channel setup: Press KEY 1 button for more than 3s to enter setup state, LED start to flash quickly 7 times then change back to the slow flash, that means it has successfully entered the set state. Then short press KEY 1 button once jump in one channel, the times of LED flashing will change, LED flashing time indicates the value of current channel. Short press KEY 2 button to exit. (Please refer to Matching Code part)

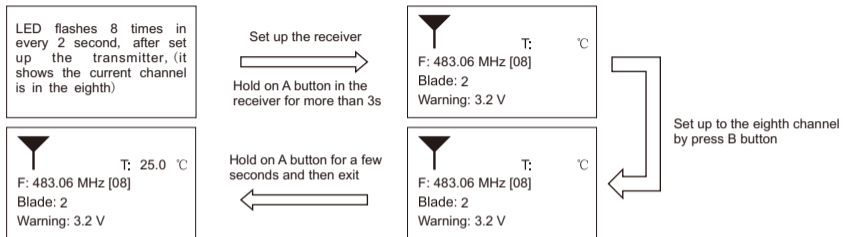
## 【Frequency hopping】

If the current frequency channel is occupied, then need to change another one. Operate as followed:

(1). Turn on the transmitter and receiver, pressing KEY 1 button for more than 3s to enter the setting state, at this time, LED in transmitter will return back to normal flash after it flash quickly in 7 times. Then short press KEY1 one, it will change one channel once, LED flashing time will change too. For example, the current channel is in the third, then the transmitter's LED flashing 3 times in every 2s, if the channel jumped into the forth, then LED changed to flash 4 times in every 2s. Short press KEY 2 button to exit.

(2). After setup the transmit frequency channel. Press A button in the receiver for more than 3s, there is a value shows in the first page of LCD, indicates the current channel value. (For example F: 843.06 Mhz [08], that means the current channel is in the eight). Short press B button to change the channel, every short press B button changes one channel, until the channel of receiver has been set at the same one as the transmitter, press the A button in the receiver for more than 3s to ensure channel and exit, receiver could get the value from the transmitter, then LED in the receiver flashes.

For example: operate flow shows in the following:



(3). Launching frequency range:

433 MHz frequency band launching module: 434.06 MHz - 504.06 MHz, divided into 11 Frequency channels and the neighbouring channels differ 7 MHz.

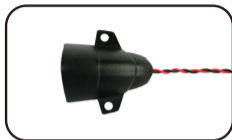
## 【Warranty and service】

We warrant this product for a period of one year(12 months) from the date of purchase. This warranty only applies to product quality problems after purchasing. During the period of warranty, with proof of purchase (invoice or receipt), all products have quality problems can be freely repaired or replaced. However, due to wear and tear, overloading, damage caused by the improper operation, do not be a free repair or replacement.

## 【產品清單】



發射器



轉速傳感器



溫度傳感器

## 【功能簡介】

1. 無線檢測；
2. 無線報警；
3. 實時轉速；
4. 實時溫度；
5. 實時電流；
6. 實時電壓。

## 【系統功能菜單】

3.1. 接收機：所有信息、顯示、進程的接收。

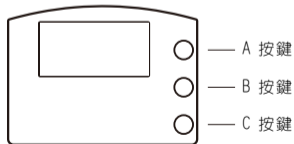
1). 工作電壓：4-9V。

A 按鍵：跳頻掃描啓動按鍵；

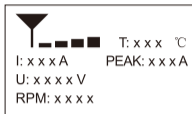
B 按盤：調取數據查看按鍵；

C 按盤：LCD翻頁顯示按鍵；

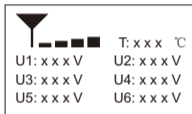
信號燈LED：收到信號閃爍，沒收到信號長亮。



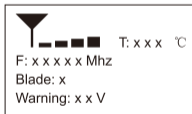
2). LCD 顯示：(每短按一次C按鍵，翻一頁顯示。)



開機後進入默認第一頁顯示：  
信號強度、溫度(T)、電流(I)、峰值電流(PEAK)、  
總電壓(U)、轉速(RPM)，如左圖所示。



第二頁顯示：  
信號強度、溫度(T)、六節電池的電壓(U1-U6)。



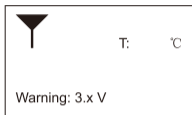
第三頁顯示：  
信號強度、溫度(T)、當前頻道頻率(F)、槳葉值(Blade)、  
低壓報警值(Warning)。

備註：在沒有收到信號的情況下，信號強度條和溫度值不顯示，其他電壓、電流、轉速值和槳葉值都是顯示0。



3). 設置低壓報警值：

- (1). 同時長按A 和B 按鍵3秒以上進入設置狀態如下圖所示，然後短按C 按鍵進行電壓值設置，設置範圍：  
3.0V-3.8V。



沒有收到信號的時候，信號強度條和溫度值不顯示。

- (2). 短按A按鍵即可退出低壓設置。

4). 接收器頻道設置：

長按接收器的A按鍵3秒以上，此時在LCD第一頁會看到頻率值後面出現了一個數值，表示當前通道值（例如 F：441.06MHz [2]，表示的是當前頻率是第2頻道）。接着短按B按鍵切換頻率通道，每短按一次B按鍵就跳換一個頻道。長按接收器A按鍵3秒以上確認并退出設置。（請參考後續跳頻設置步驟）

5). 接收信號頻率範圍：

433MHz頻段接收模塊：434.06MHz-504.06MHz，劃分為11個頻率通道，相鄰通道之間頻率相差7MHz。

6). 功耗：正常工作電流<20mA，當蜂鳴器報警時電流<150mA。

3.2. 發射板：

1). 功能：電池電壓檢測、電流檢測、溫度檢測、轉速檢測和數據無線傳輸。

- ①. 電壓檢測範圍：2-6 節LiPo/LiFe/LiIo電池，且第一節與第二節電池電壓之和不能低於4V。平均檢測誤差 $\pm 10$  mV。
- ②. 電流檢測範圍：0-30A，平均誤差  $\pm 0.1$ A；

- ③. 溫度檢測範圍：-10°C - +100°C；
- ④. 轉速檢測範圍：0 - 99999r/min.
- 2). 功耗：正常工作電流<30mA。
- 3). LED工作狀態表示：正常工作狀態，LED閃爍的次數表示當前發射頻道值。例如：LED每隔2秒鐘閃爍6次，則表示當前的發送頻率通道是第六通道。
- 4). 槳葉值設置：長按發射板“KEY2”按鍵3秒以上進入設置狀態，此時LED長亮，之後每短按發射板“KEY2”按鍵一次，槳葉值加一（在接收器的LCD屏可看到當前值），最多可以設置9個槳葉。設定完後，短按發射板“KEY1”按鍵退出槳葉值設定狀態。
- 5). 頻道設置：長按“KEY1”按鍵3秒以上進入設置狀態，此時LED快速閃爍7次之後變回慢閃，表示已經成功進入設置狀態，之後每短按一次“KEY1”按鍵，就跳換一個頻道，LED閃爍的次數也隨之變化，LED閃爍次數表示當前頻道值。短按“KEY2”按鍵即可退出頻道設置。（請參考跳頻設置部分）

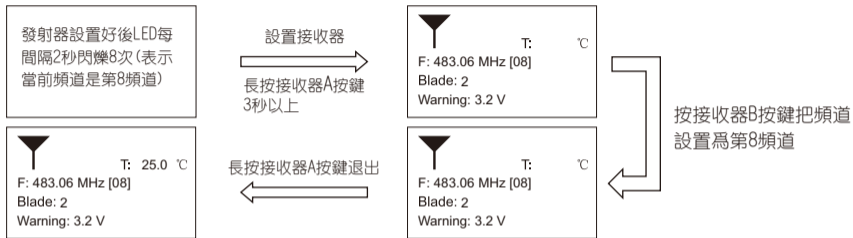
### 【跳頻設置】

如果當前頻率通道已經被占用，則需要跳換頻道，操作如下：

(1). 開啓發射器和接收器，長按發射器的“KEY1”按鍵3秒以上進入設置狀態，此時發射器LED快速閃爍7次之後變回正常慢閃爍。之後每短按一次“KEY1”按鍵，就跳換一個頻道，LED閃爍次數隨之變化（例如，當前頻道是第三頻道，則LED是每隔2秒閃爍3次，若跳換至第四頻道，則LED隨之變化，變成每隔2秒閃爍4次，其他頻道設置如此類推）。設置完後，短按“KEY2”按鍵即可退出。

(2). 設置好發射頻率通道後，長按接收器的A按鍵3秒以上，此時在LCD第一頁會看到頻率值後面出現了一個數值，表示當前通道值（例如F：857.06MHz [08]，表示的是當前頻率是第8頻道）。接着短按B按鍵切換頻率通道，每短按一次B按鍵就跳換一個頻道，直到把接收頻道設置到和發射器同一個通道後，長按接收器A按鍵3秒以上確認頻道并退出設置，接收器馬上會收到發射器的數據，接收器LED燈開始閃爍。

例：操作流程如下圖



(3) . 發射頻率範圍：

433MHz頻段發射模塊：434.06MHz504.06MHz，劃分為11個頻率通道，相鄰通道之間頻率相差7MHz。

### 【保修條款】

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