MTSK20WFV2 Remote and receiver for Electric skateboard

Simple instructions
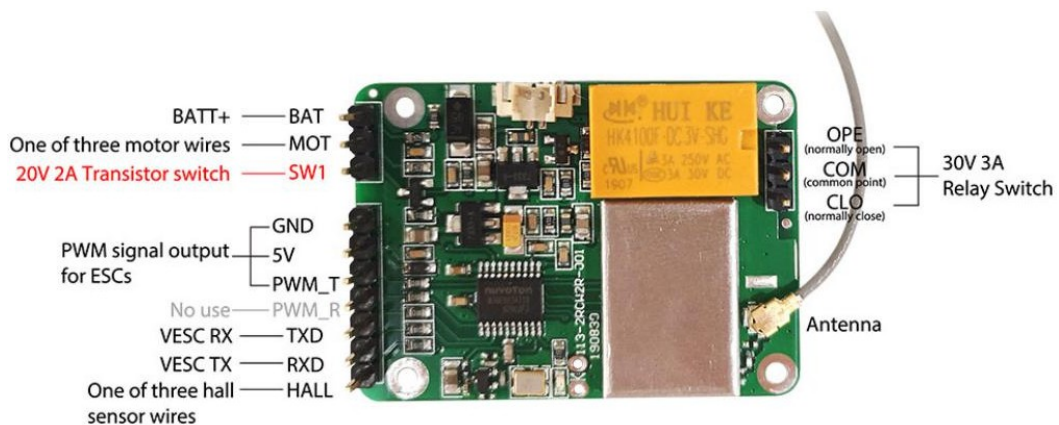
Here're new remote instruction videos:

1-3 speed modes ajustment: https://youtu.be/bSyG4k-D76U
4-5 battery settings: https://youtu.be/ibd0431_NSg
7-14 settings:https://youtu.be/O8IgYdbT2-A

1.Appearance：

2.Receiver wiring instruction with VESC or VESC based controllers

- Cross connection of Receiver TXD/RXD and VESC RX/TX:
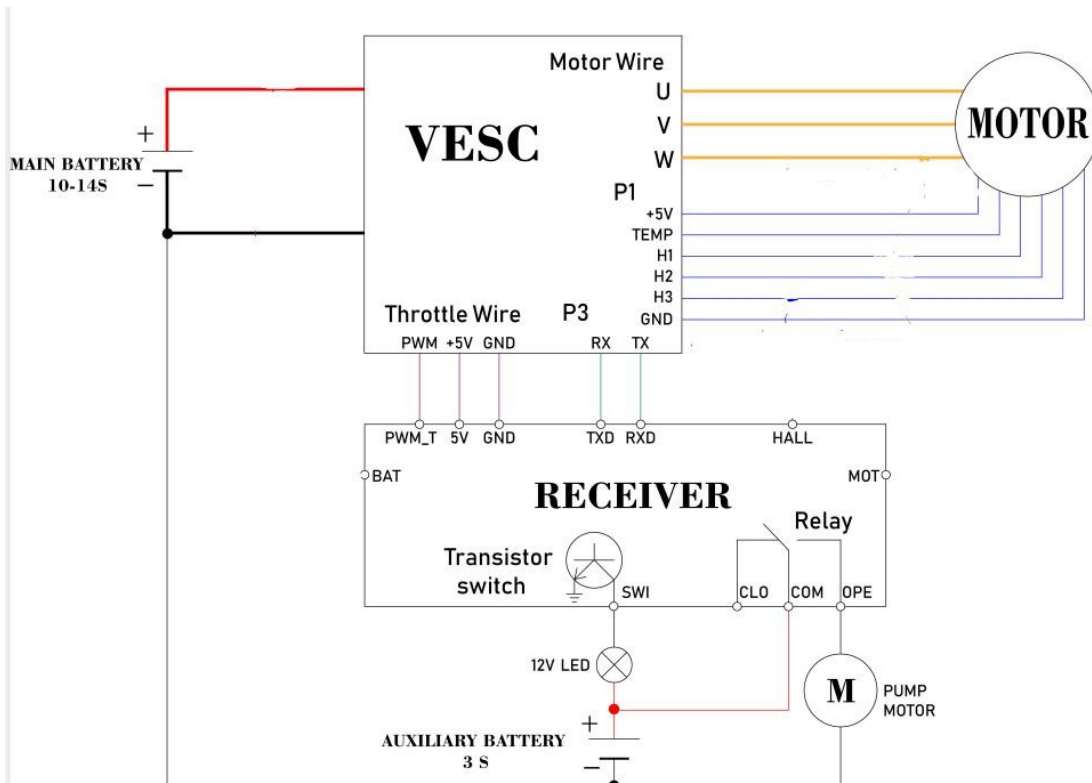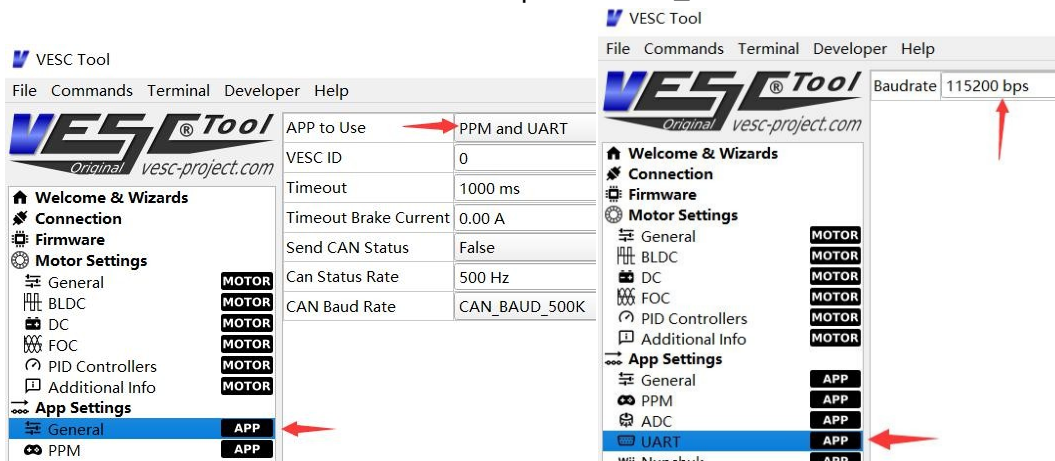
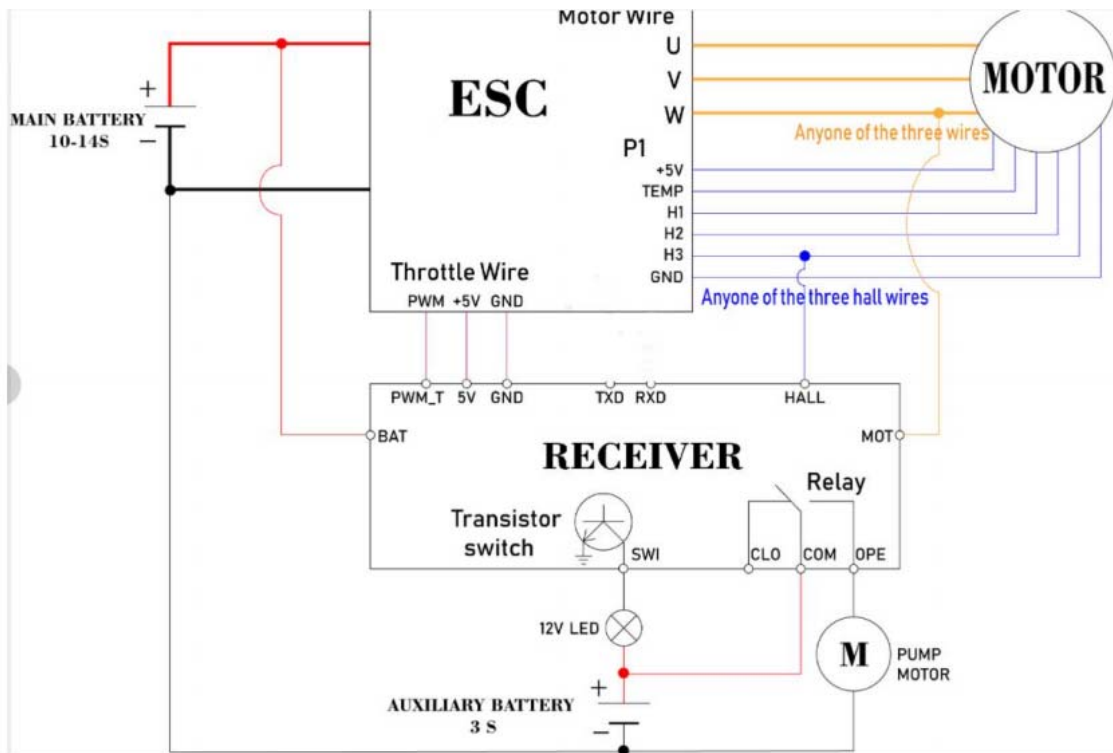 Receiver's TXD>> VESC RX;

  Receiver RXD>> VESC TX

  better use stranded wire, wire length should be shorter than 20cm.

- VESC supports UARR and PWM(PPM) throttle control. When use with Maytech waterproof remote, you can select PPM and UART, and select corresponding control in remote ("Data Source" and "VESC Thr"). PPM to control throttle and UART to read voltage/current/ temperature/speed/etc.

- Please set "Baudrate" to "115200 bps" in VESC_TOOL.

3.For non-standard VESC firmware or other normal PWM ESCs:

Data Source：

Speed sginal is detected by motor phase wire or hall sensor wire or VESC. Please select 【Data Source】 in remote manual and make sure hardware is connected correct and well. The original acquisition speed signal is the electrical speed of the motor (ERPM). Then remote will convert it to RPM or Speed and display.

Mode	Speed	Conversion formula
Esk8	Skateboard speed (KM/H)	ERPM/Motor Poles/Gear Ratio*60*3.14*Wheel Dia/1000000
	Skateboard speed (MPH)	ERPM/Motor Poles/Gear Ratio*60*3.14*Wheel Dia/1000000*0.6214

Distance：

● When【Data Source】is set to【Motor Wire】or【Hall Sensor】, the distance is the accumulation of the product of speed and time per 0.1 second.
● When【Data Source】is set to【VESC】, remote and receiver will read VESC's ABS data by UART port and calculate it to distance and display.
● When you want to reset Distance, select【Dist. Rst.】and long press Function button, then Distance will start from 0.

Main battery voltage display:

● When【Data Source】is set to【VESC】, it will obtain VESC voltage information by UART port; Otherwise, voltage information is obtained by BAT port on receiver PCB.
● Please make sure receiver GND and your main battery GND are connected(common ground).
● If receiver is not connected to main battery or VESC UART port, remote will not display anything about main battery.
● If receiver gets voltage information, remote will show voltage in bars according to preset 【 Batt. Type】 and 【Batt. Ser Num】.
Under the voltage bar on remote screen, it's marked【xx Batt.】. "xx" means current【Batt. Ser Num】value, please check if it's same as your battery specification.
If【 Batt. Type】or【Batt. Ser Num】is set different from your battery's actual value, voltage

display will be incorrect. Please make sure correct settings of both.
If voltage bars only have 2 or less left, the bars and 【xx Batt.】words on screen will flash to remind you charge your battery.

4.Pairing:

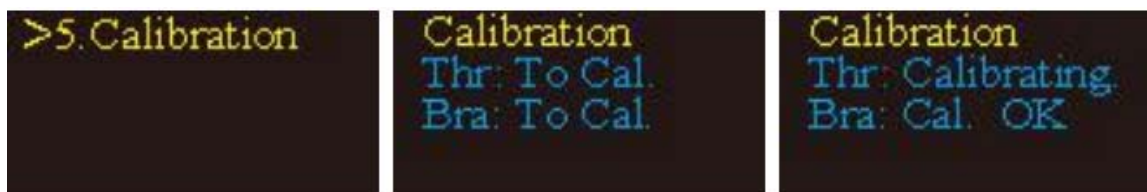1. If remote and receiver are paired successfully before, then no need to pair them again.

2. If remote and receiver does not get paired before, please pair them according to below steps:

    1) Turn off receiver.

    2) Select【>4.Pair】and long press function button for 1 second to enter pair status. When screen shows

【Paring…】, turn on receiver and it will auto-pair with remote control in 0.5 second. Red led lights steady. Pairing competed. Remote screen will automatically return to main menu. If auto-pairing time is over 1 second and screen still shows【Pairing…】, pairing fails and it needs to turn off and turn on receiver again to pair them. If you don't want to continue the pairing process, long press function button to exit to main menu.

5.Calibration

Due to environmental changes during use, remote calibration may be out of proportion to the output of PWM
signal. Then it needs to do calibration.

Select 【 >5.Calibration 】 and long press function button for 1 second to enter Sub-menu. **Once enter calibration, it must need to be finished.** If don't continue calibration and exit, remote and receiver will stop working together.

Press throttle trigger to top and loose it. Then press brake trigger to top and loose. When press trigger, the screen will prompt【Calibrating】 and 【 Cal. OK】.

After both two are【 Cal. OK】, long press function button to return to main menu

6.Charging:

- When remote battery icon has 2 or less bars, it needs to charge the remote. Please keep remote dry when charging.
- Connect wireless charger to power, put remote Charging Point right on the wireless charger; it will automatically charge after 2 seconds.
- Remote screen will show charger input voltage "Input" and current battery voltage "Batt.".
- When remote battery gets to 4.2V, it will stop charging automatically.The screen displays voltage data all the time and will not shut down automatically. Please don't put remote on charger for longtime after full-charged!
- Charging without supervision is prohibited!
- When the remote control is not used, please charge it once a month, otherwise the battery life will be shortened or even scrapped due to long-term power loss.