

The manual to wire the Ez GOTO

Before installation, you are supposed to be familiar with few tools and have ever learned basic electric knowledge.



1. Multimeter to check wires connected well.
2. Crimping Tool to repair XH2.54 / PH2.0 / Dupont connectors
The enclosed bag includes the pins and connectors to replace broken or worn out connectors.

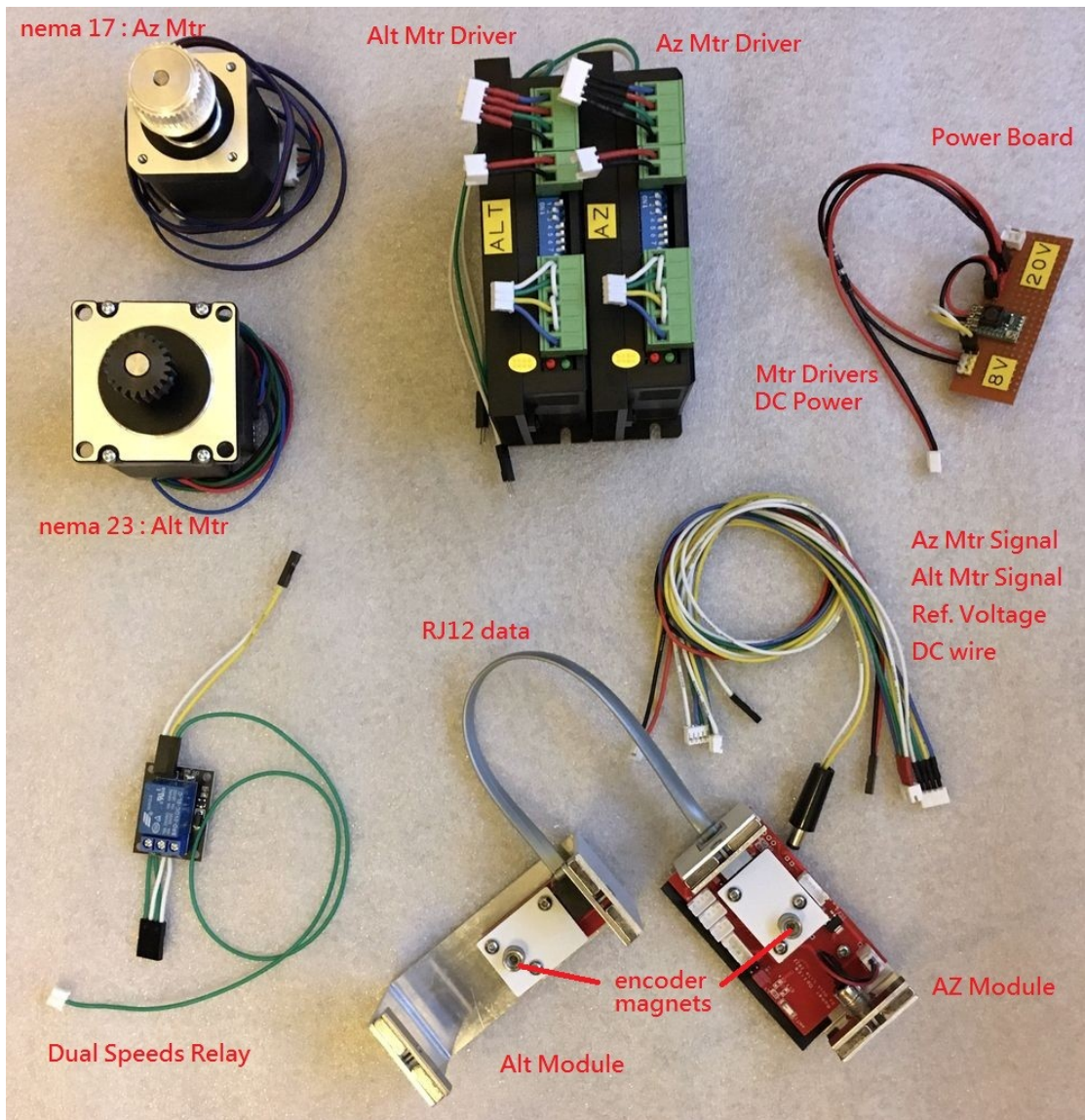
Notice Before your installation

Red(+)/Black(-) is 20 DCV

Yellow(+)/White(-) is 8DCV

Please wire Ez GoTo with our enclosed “handmade wires” which are protected by one-way diode in case of any mistaken +/- . We tested each wire on the ez goto kit before packing, but you shave to make sure them again if the pins fall off or not.

The electric parts of Ez Goto



The Power Supply



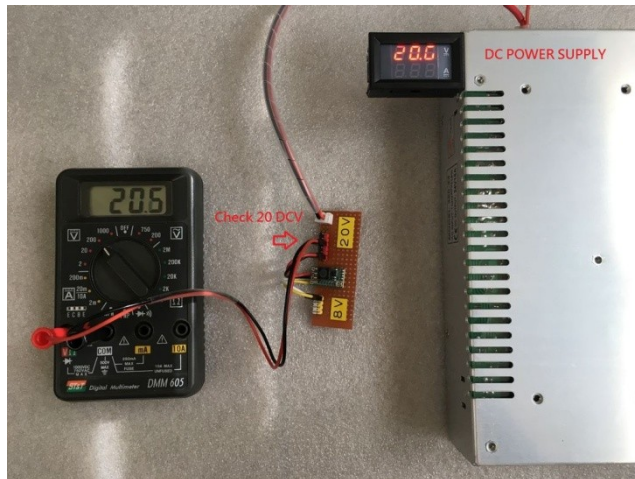
We recommend the inexpensive laptop adapter (Lenovo 90W 20 DCV) for \$6.99 on eBay.

The ez goto (Az : nema 17/ Alt : nema 23) consumes about 20V 0.4A when stationary and 0.9A while goto and tracking. The total power is supposed to be less than 30W when running full speed.

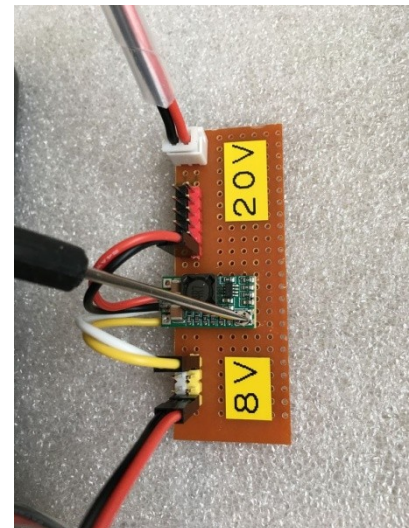
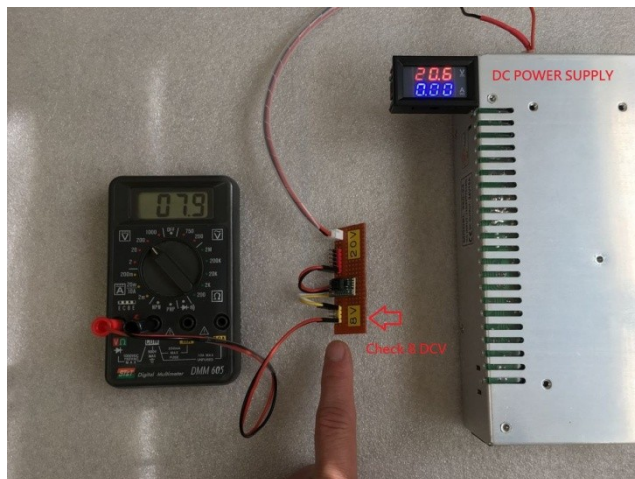
1. Check Power Board

We have checked the outputs of the power board before packing it, but advise you to check the voltage in case.

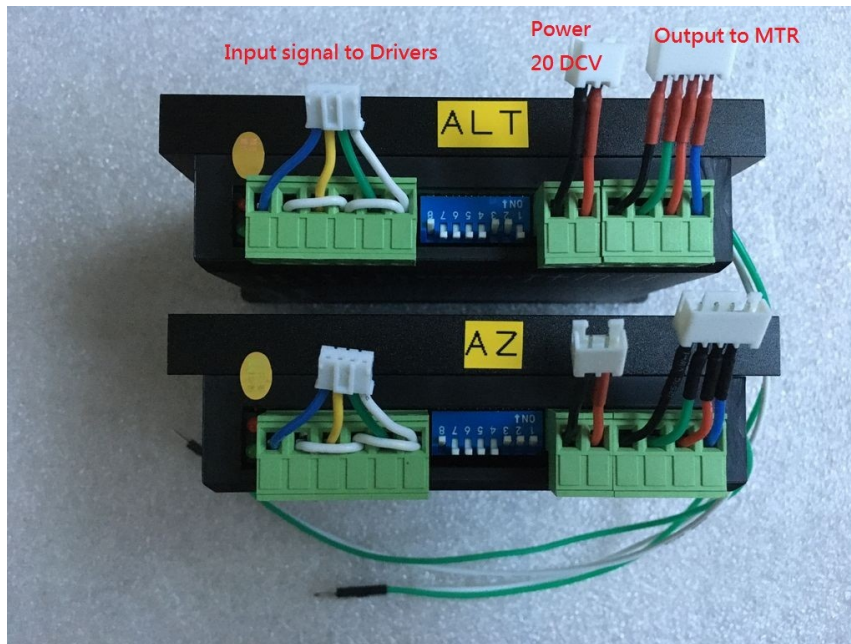
Red/Black is 20 DCV (little more 20 is much better, like 20.5 DCV)
Red/black is identical with the power supply



Yellow/White is 8 DCV (no more than 12 DCV)
You can adjust the output with a screwdriver



2. Understand the Motor Driver



Input signals to driver

Blue: pulse

Yellow: direction

Green: Enable (electric clutch)

White: Ground

Power

Red: 20 DCV(+)

Black: Ground (-)

Output to MTR

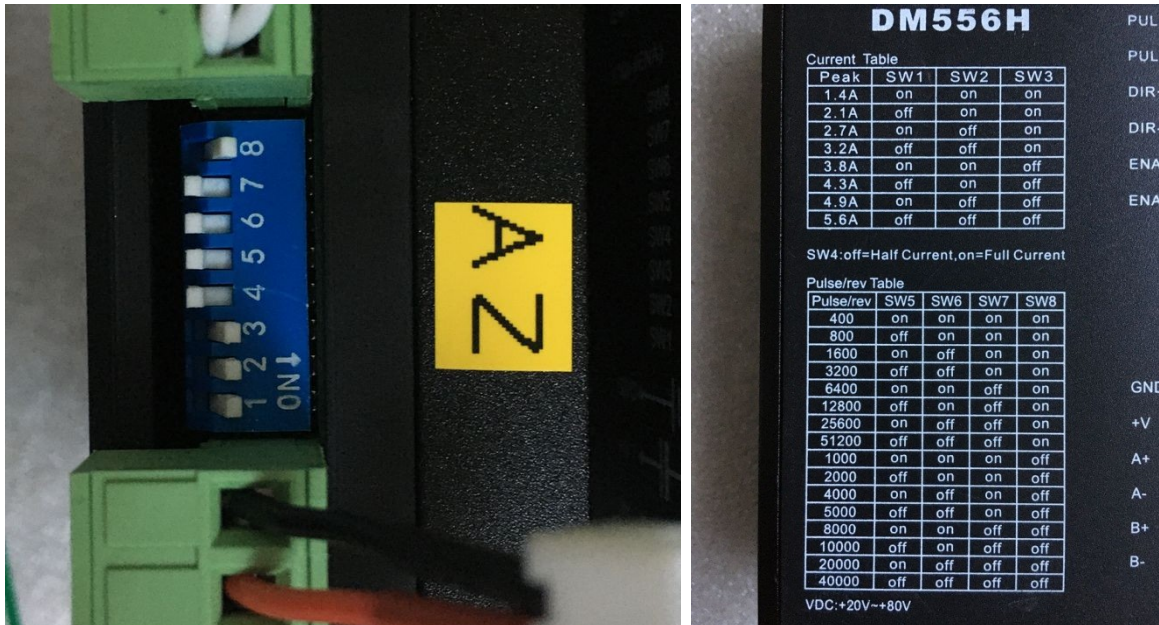
Black: A+

Green: A-

Red: B+

Blue: B-

Jumpers Settings

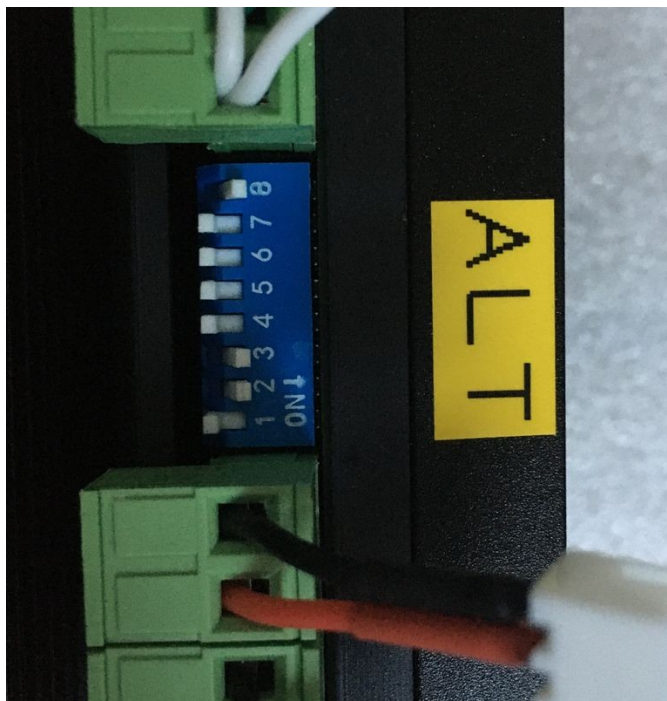


Az driver defaults jumpers to

1(ON) 2(ON) 3(ON) → **Peak current 1.4A for nema 17**

4(OFF) → **Half current** (less torque at stationary, save enegy)

5(OFF) 6(OFF) 7(OFF) 8(ON) → **200/51200 = 1/256 micro stepper**



1(OFF) 2(ON) 3(ON) → **Peak current 2.1A for nema 23**

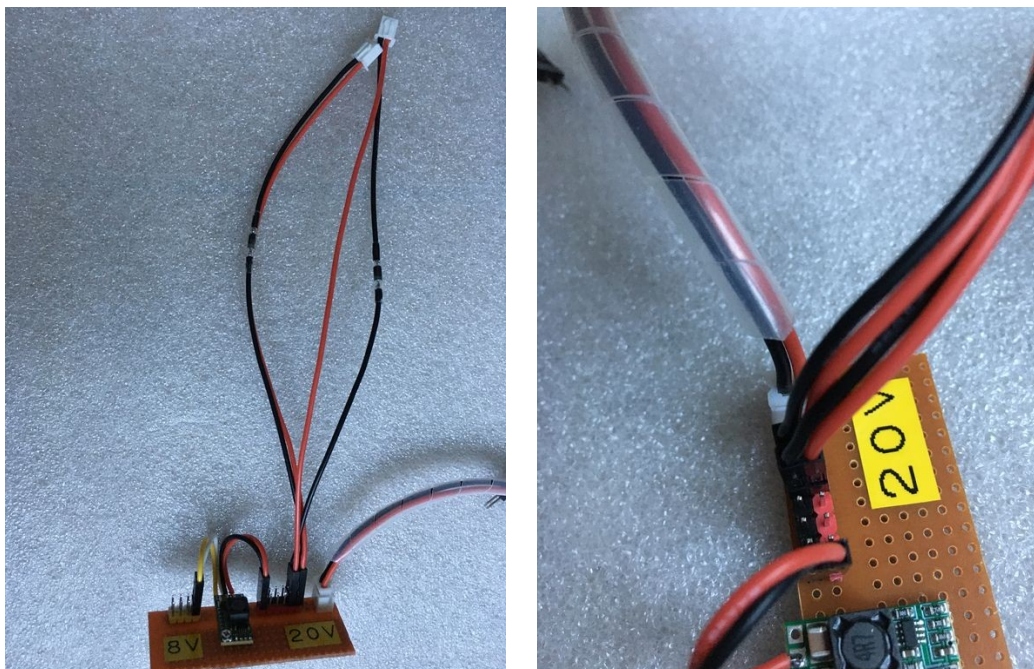
Please do not set too high current, otherwise the motor become hot and noisy (vibration)

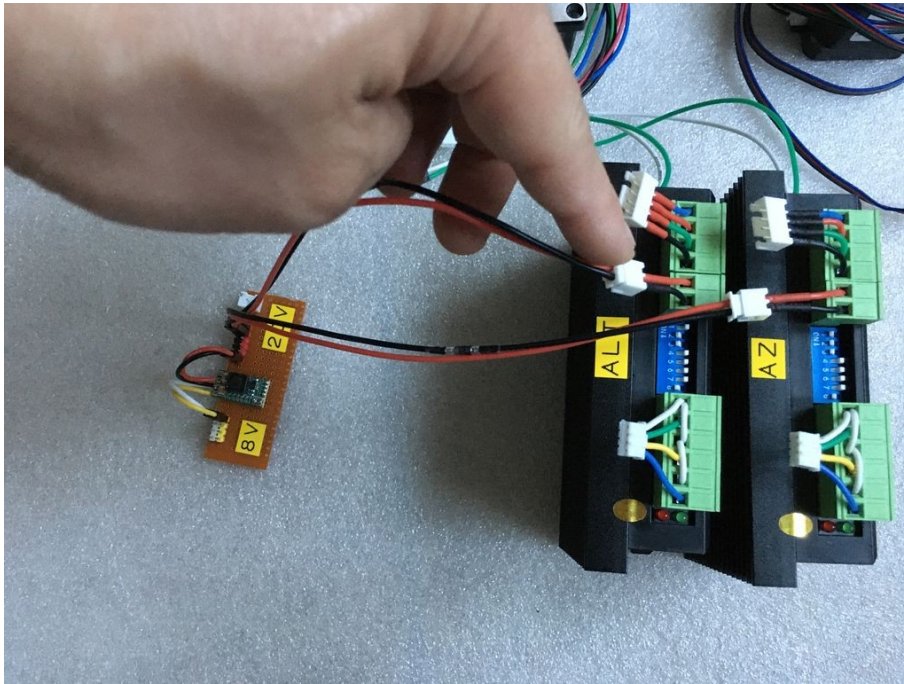
3. Wire the Power wires to Driver

Use our handmade power wires unless you know how to wire them safely. Our power wires are protected by one-way diode in case of mistaking +/-.



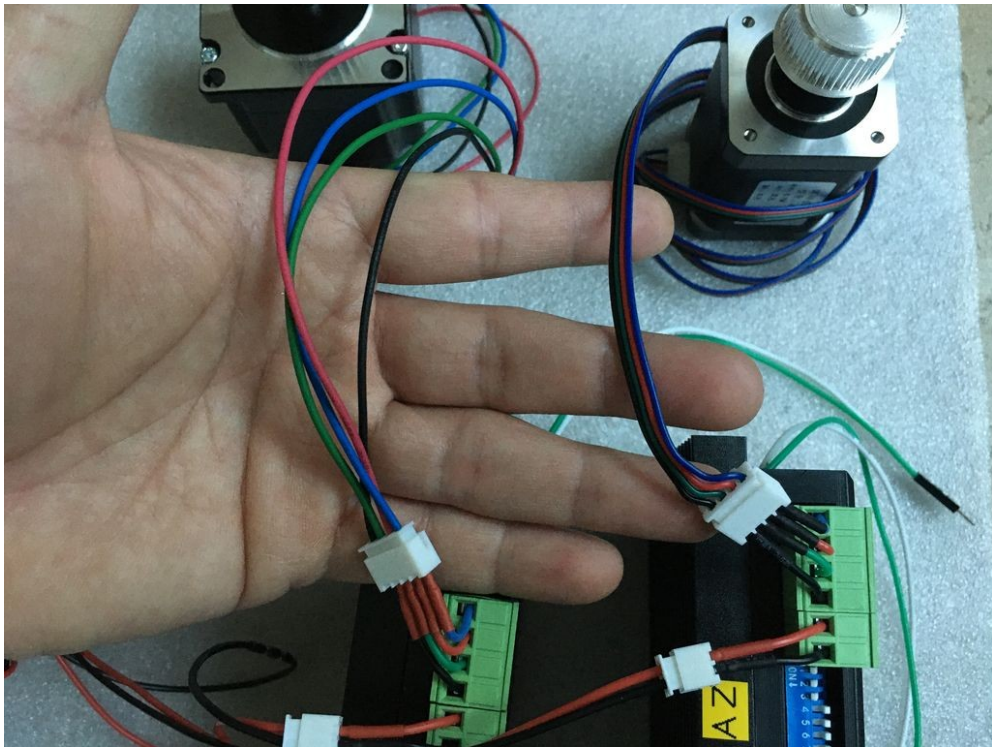
We enclose two power wires (**red/black 20 DCV**) to Az and Alt drivers.





The power connectors are fool-proof **XH2.54 - 2 pins**

4. Wire the Az / Alt motors to Drivers

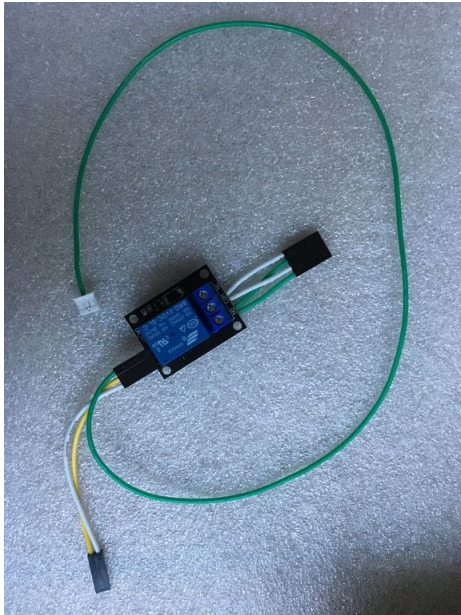


The motor connectors are fool-proof **XH2.54 - 4 pins**

Az driver to Nema 17 (smaller motor)

Alt to driver Nema 23 (larger motor)

5. Install Dual Speeds Relay



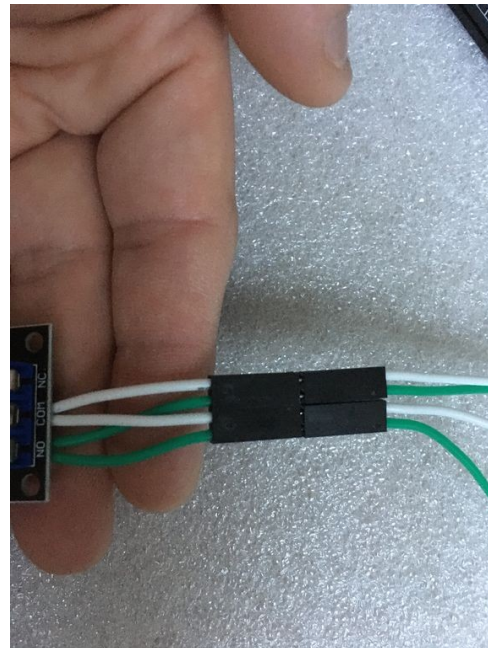
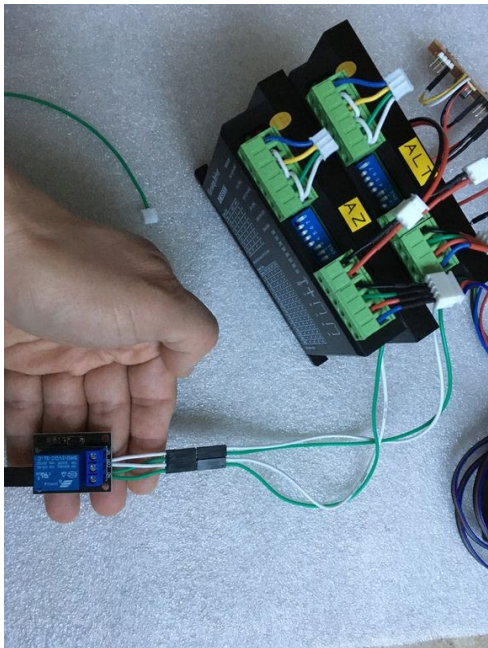
Green/white/Green/White:
To Az/Alt drivers

Single Green:
Trigger signal to Az module

Yellow/White: 8 DCV

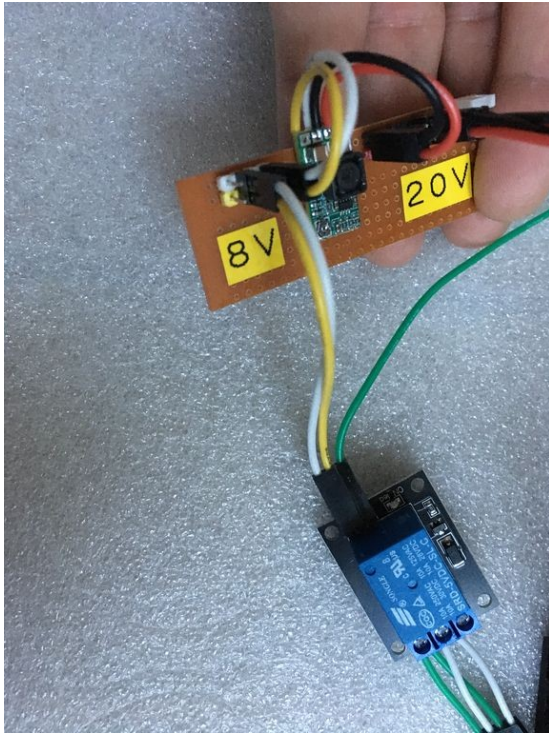
Green/white/Green/White: To Az/Alt drivers

Be aware to match the colors (two pair of green/white)

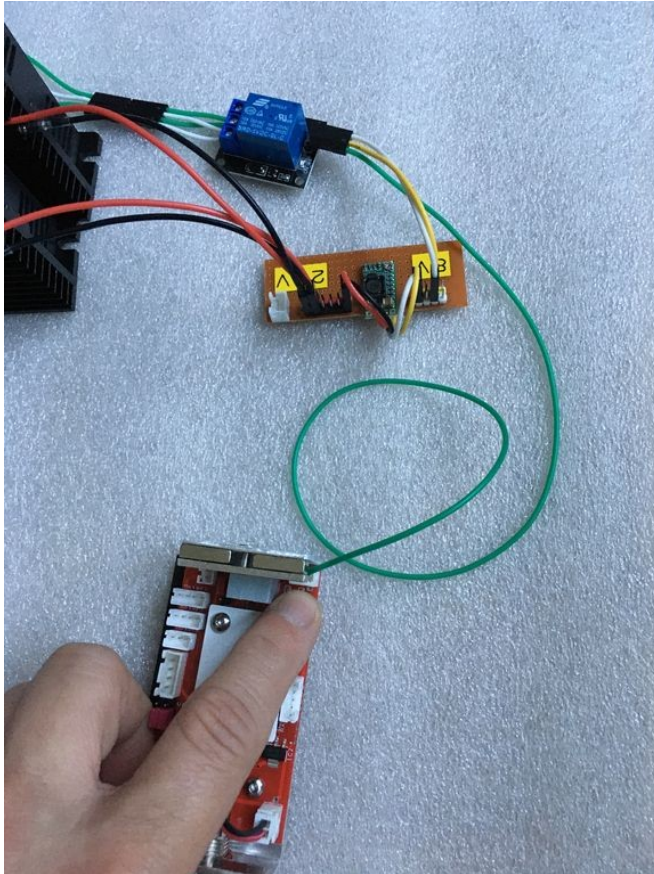


Notice: The green/white are used to **on/off the 6th jumper** in the driver which transfers micro steppers between 1/256 and 1/64. In short, the driver runs 1/64 (goto 4X speed) and 1/256(tracking).

Yellow/White: 8 DCV



Single Green: Trigger signal to Az module

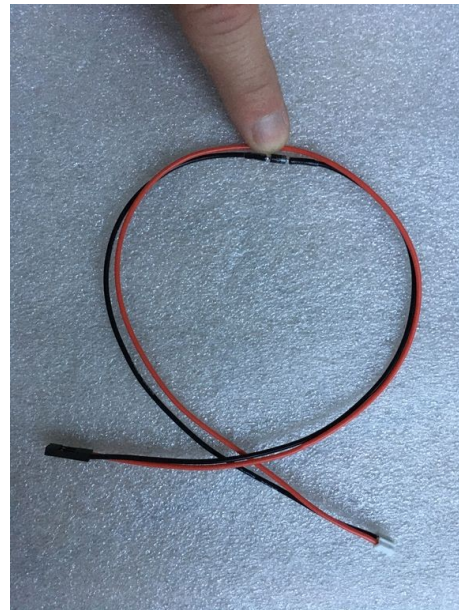


6. Install Reference Voltage wire

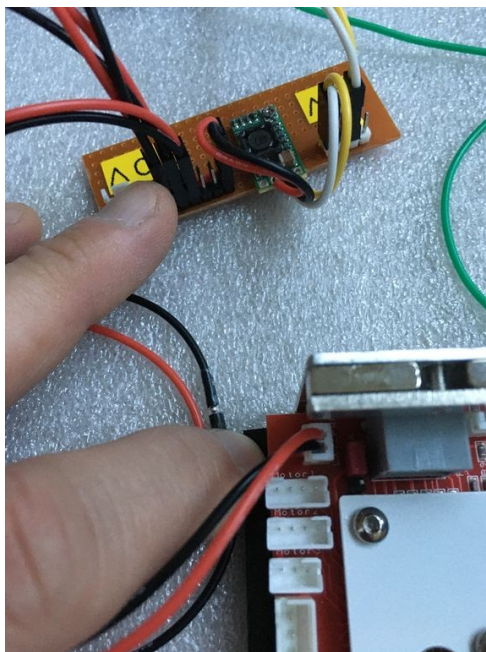
Reference voltage is the voltage level of the signals. Generally, voltage level of signals to drivers are between 5-24V.

Notice: Mistaking +/- damages the Az module !

Please use our “handmade Ref. Voltage wire” which is protected by a one-way diode and fool-proof connector.

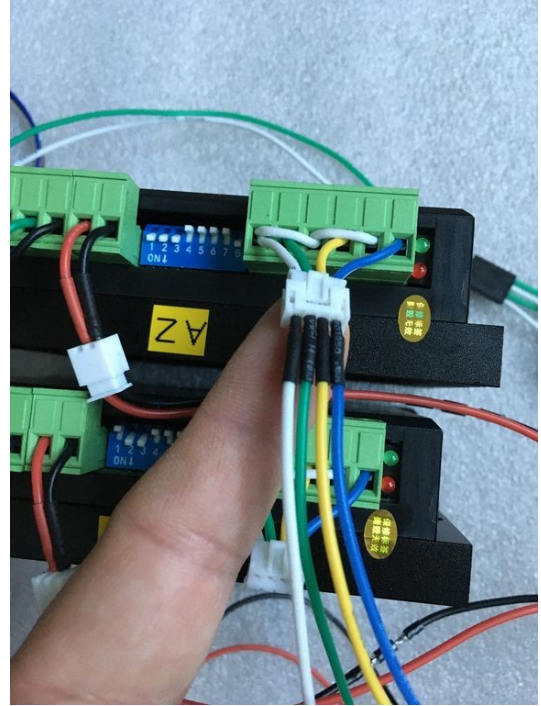
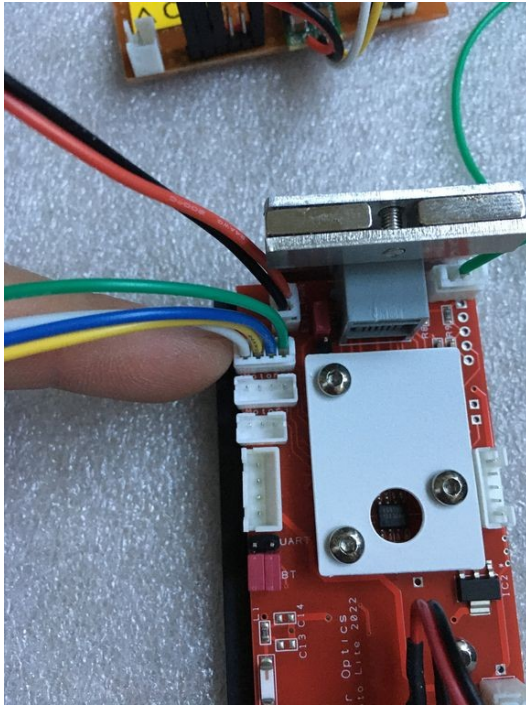


One end to Red/Black (20 DCV), the other to Az module

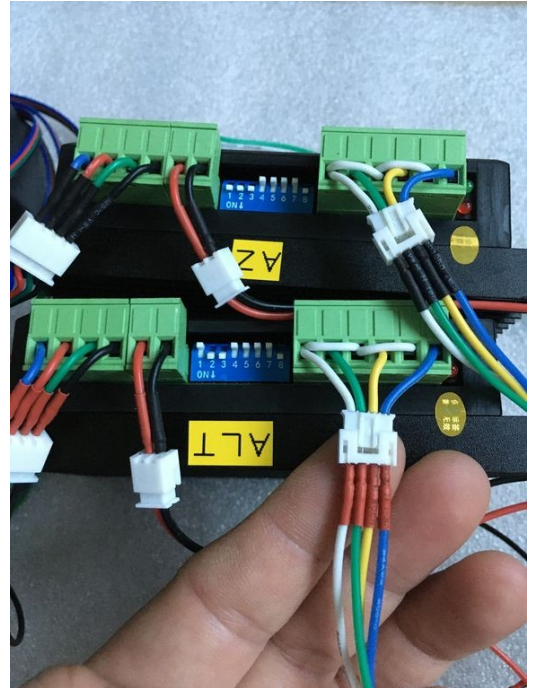
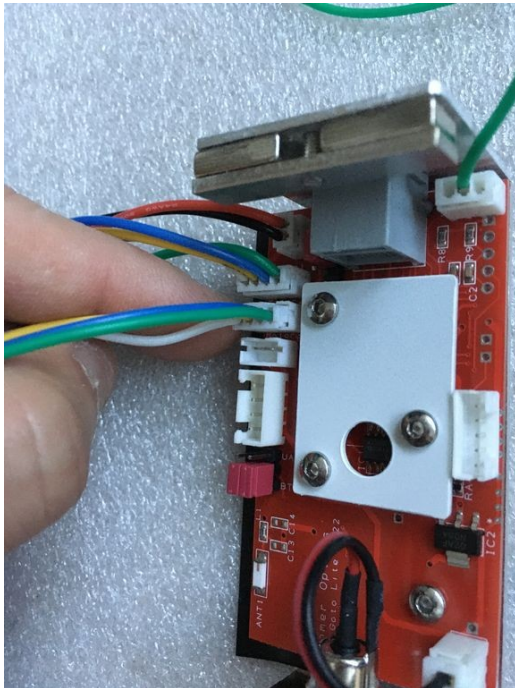


7. Wire Signals between Az module and Drivers

4 colors wire (1st slot : Az Mtr) to Az driver



4 colors wire (2nd slot: Alt Mtr) to Alt driver

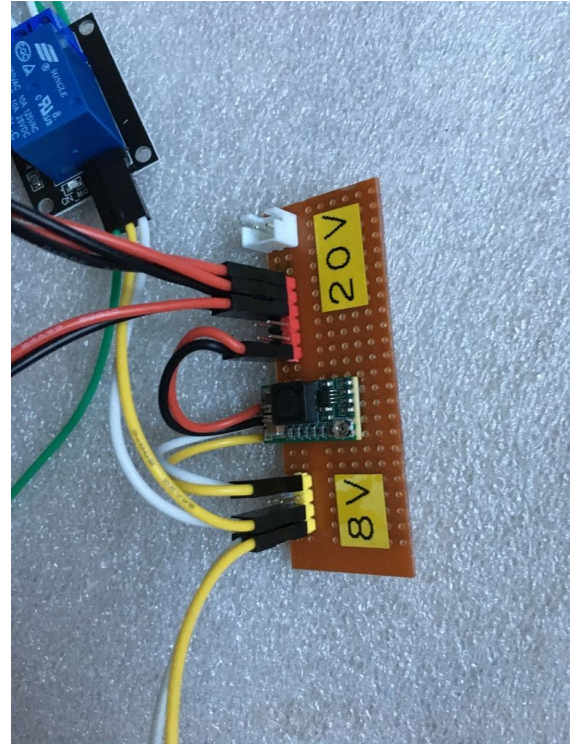
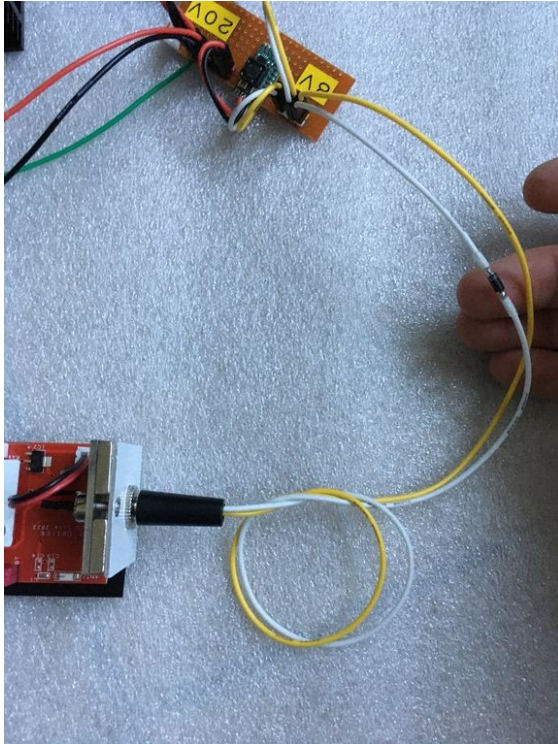


8. DC power to AZ module

Notice: Mistaking +/- damages the Az module !

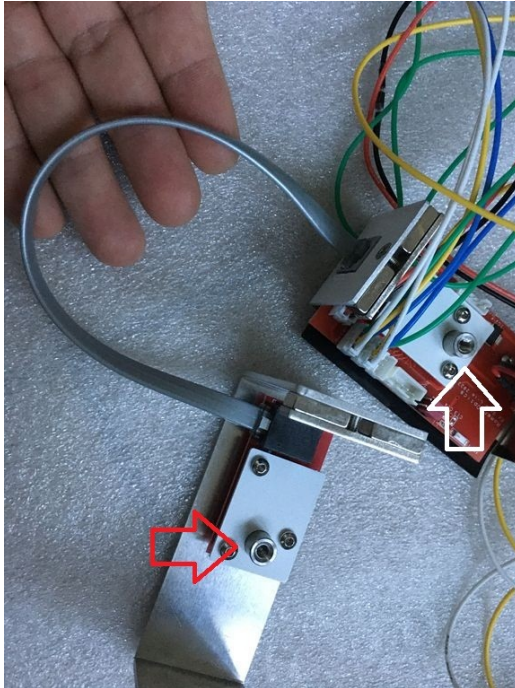
Please use our “handmade DC wire” which is protected by a one-way diode and fool-proof connector.

DC power is Yellow/White (8 DCV)

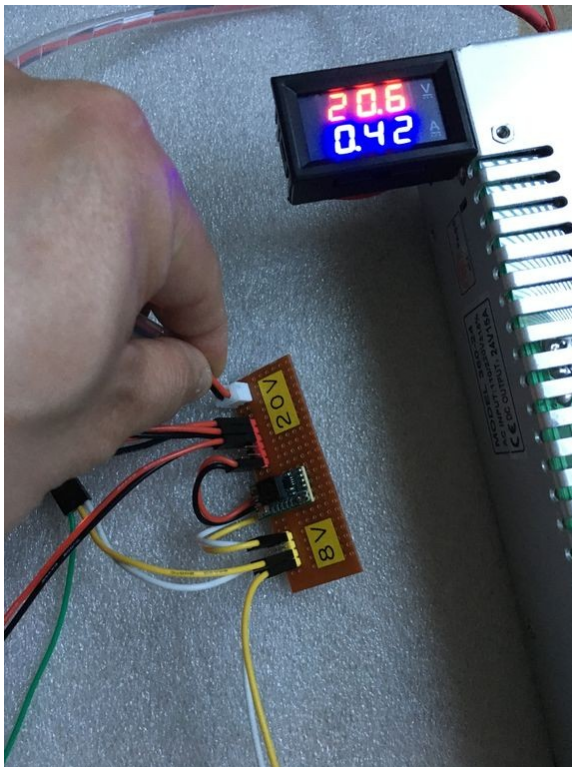


9. Connect Alt module and Power on the Ez Goto

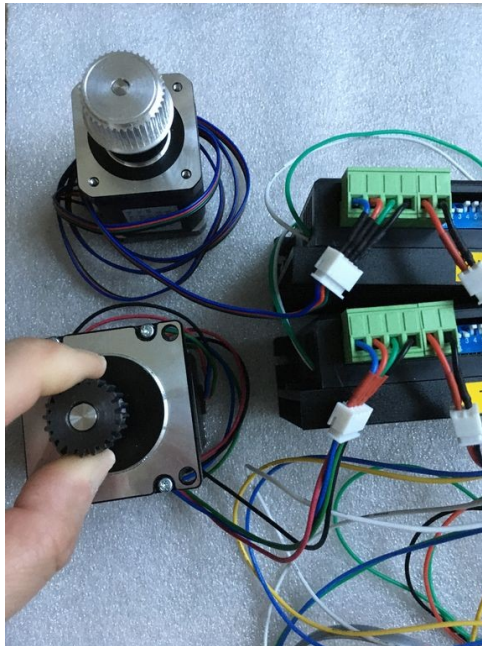
Connect the RJ 12 data cable with Alt module. Do not forget to install the encoder magnets



Plug the main power (20 DCV)



Generally, the shaft of motor is hard to spin by fingers because of the strong torque.



The Led of drivers is Green. The Alt module is light On

