Gimbal Motor Driver Quick Operation Manual

--For GL II

V1.0.0

Precautions

1.Ensure that there are no short circuits in the circuit and that interfaces are connected correctly as required.

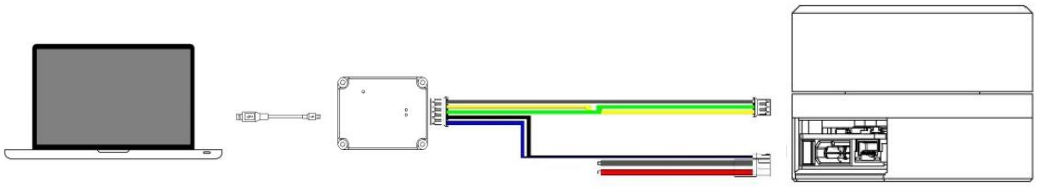
2.  The driver board will heat up during output; please use it carefully to avoid burns.

3.  Before use, please check if all parts are intact. If any parts are missing or aged, please stop using it and contact technical support in time.

4.  Multiple optional control methods cannot be switched while the driver board is running, and the communication protocols between different control methods are different. If you need to switch, please restart the power supply before changing. Using the wrong protocol to control may burn out the driver board!

5.  Please strictly follow the working voltage, current, temperature, and other parameters specified in this document; otherwise, it will cause permanent damage to the product!

1、Connecting the Motor



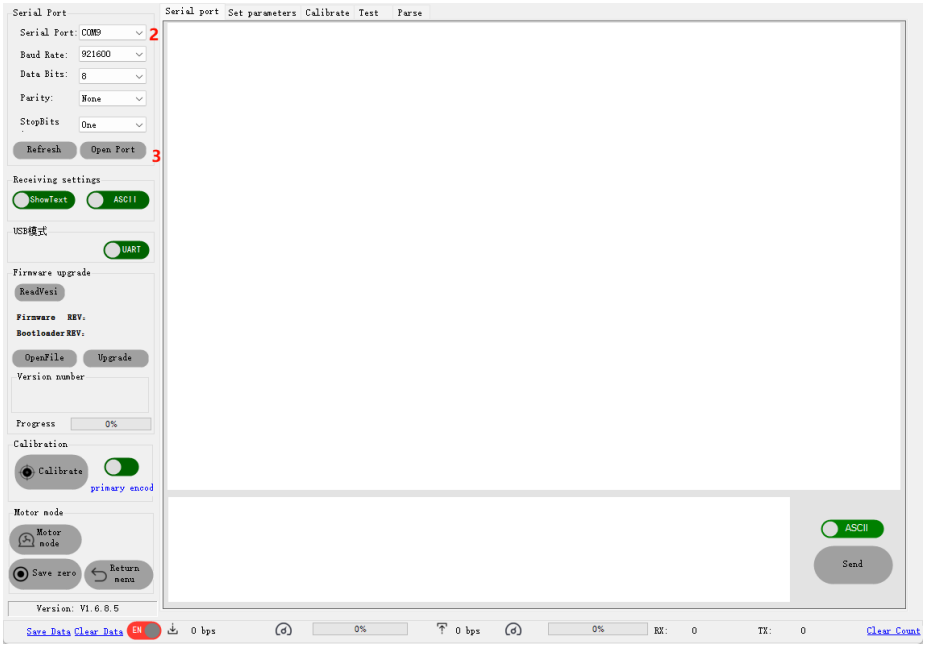
S-link USB cable --> PC end

2+2Pin terminal (Power and CAN) --> Motor's 2+2Pin terminal (Power and CAN)

3Pin terminal (UART) --> Motor's 3Pin terminal (UART)

1、 Connect S-link to the computer and motor.

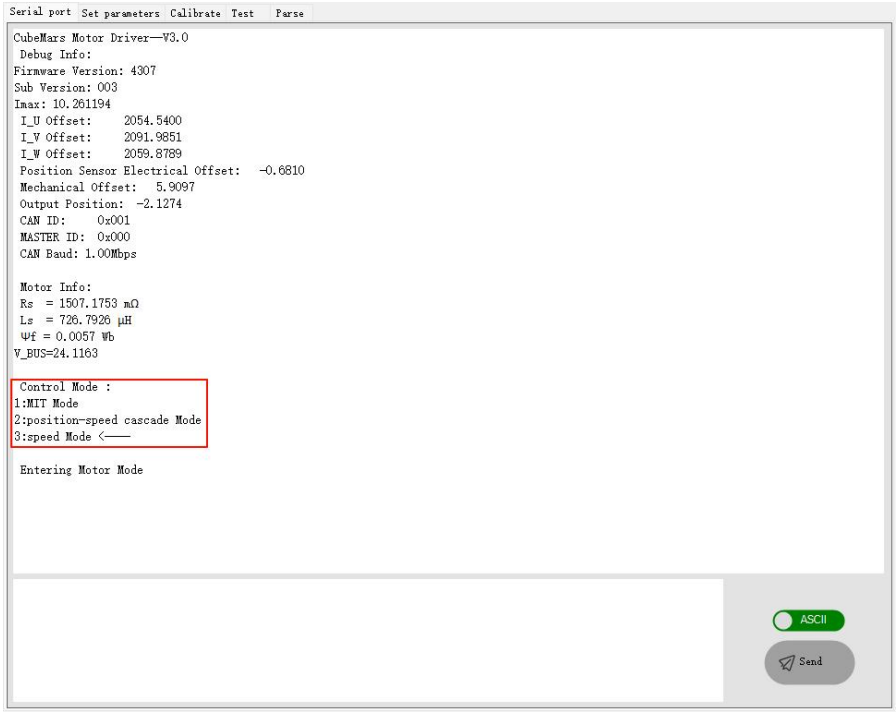
2、 Open the upper computer software



3、Click on the "Serial Port" tab; and select the corresponding COM port for S-link.

4、Click "Open Port".

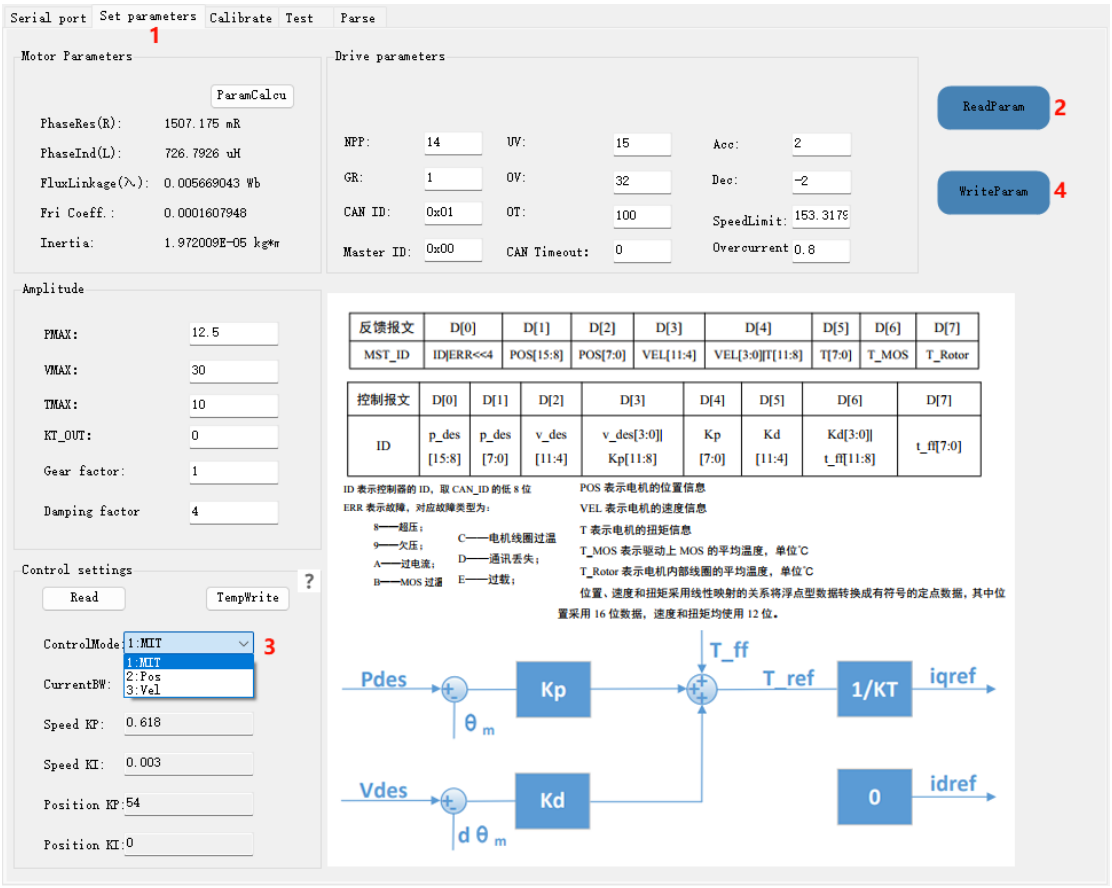
5、 Turn on the motor power, the motor information will be displayed automatically, and the current control mode will be indicated.



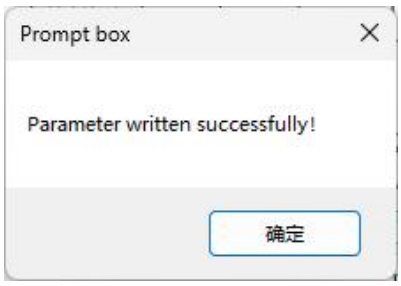
2、Operation

⚠： After the motor is reinstalled with the driver board, or if the wiring sequence has been changed, or if the firmware has been updated, calibration must be performed. Refer to Section 4.3 of the "GL40 Module Driver User Manual" for driver board calibration.

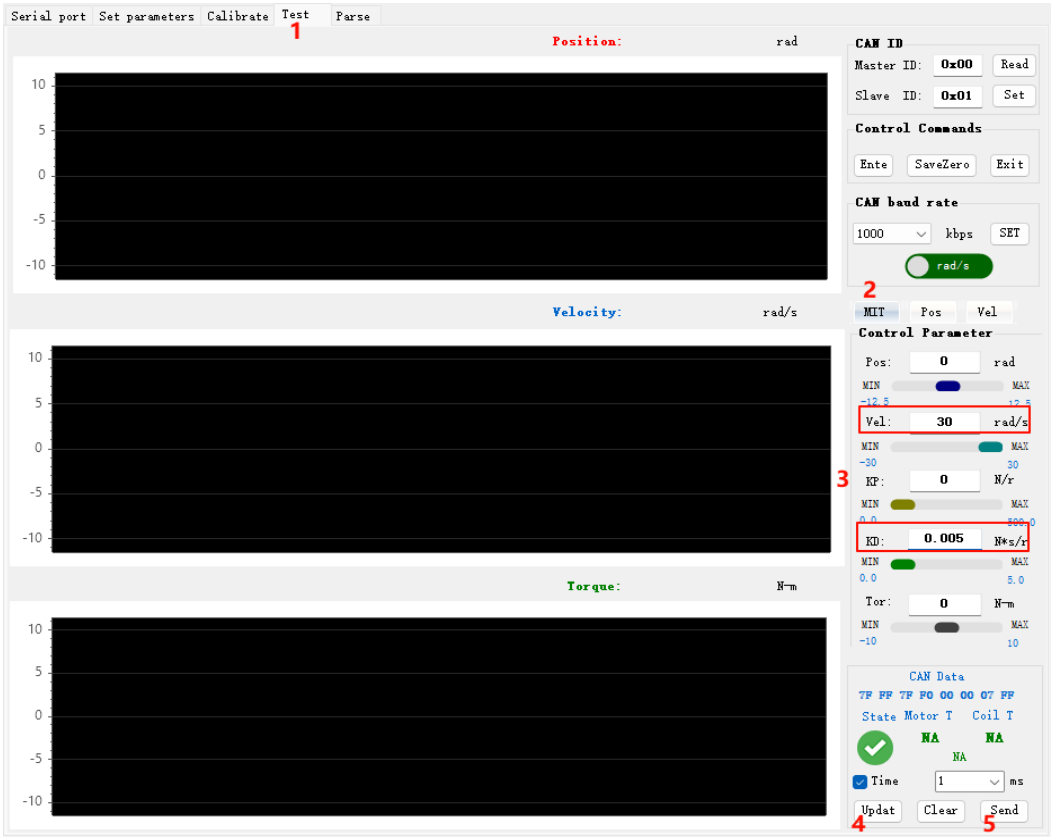
2.1 MIT Mode



1. Click on the "Set Parameters" tab.
2. Click "ReadParam".
3. Select "MIT Mode" in the control mode.
4. Click "WriteParam", and after the "Parameter Written Successfully" message pops up, repower the motor.



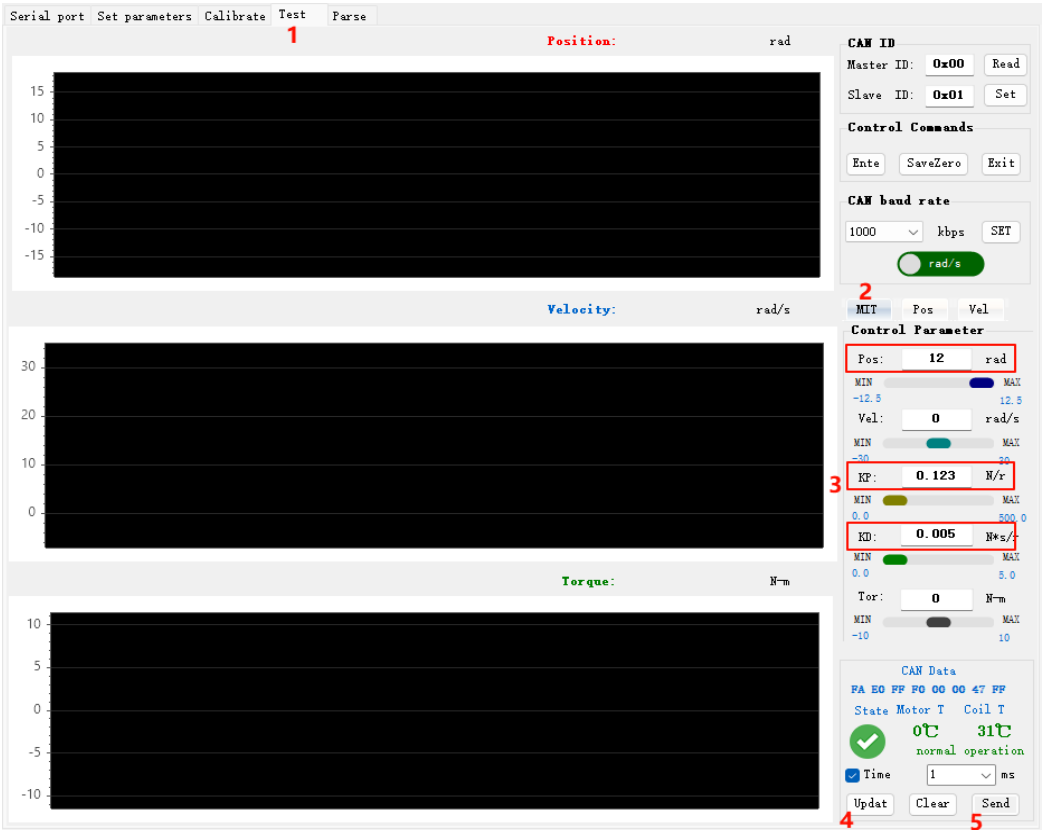
2.1 Velocity Control



1. Click on the "Test" tab.
2. Click "MIT" above the control parameters.
3. Set the speed to 5rad/s and KD to 0.005N*s/r.
4. Click "Updat".
5. Click "Send", and the motor starts to run.

⚠：Secure the motor in place.

2.2 Position Control



1. Click on the "Test" tab.

2. Click "MIT" above the control parameters.

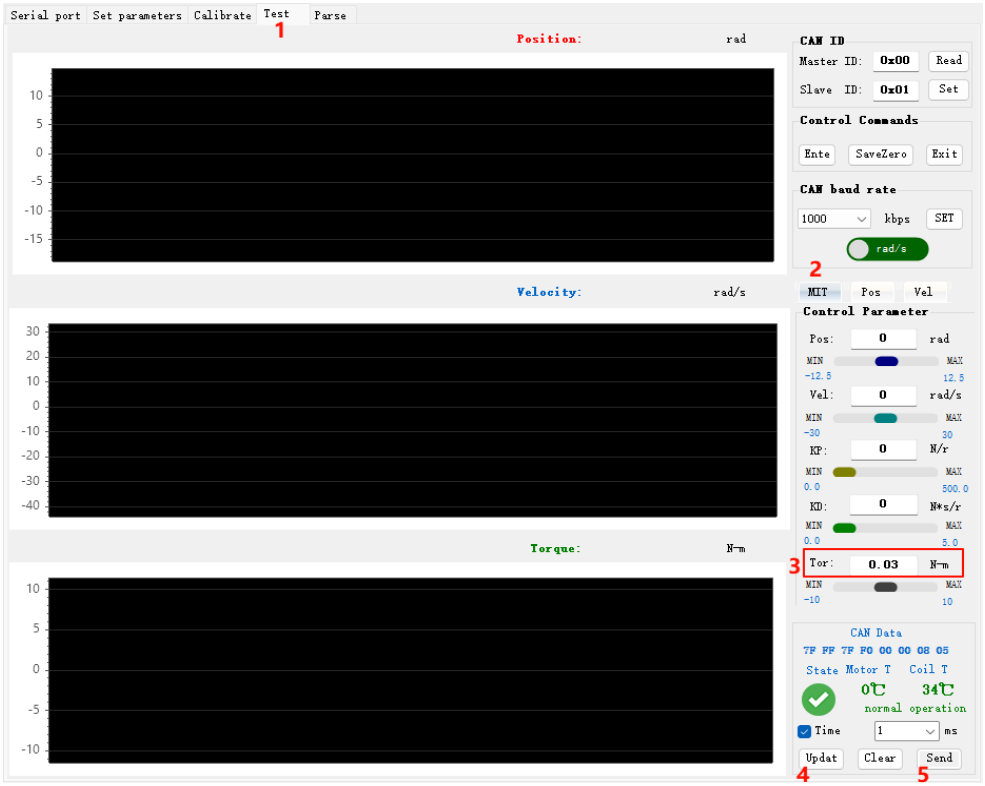
3. Set the position to 12rad, KP to 0.123N/r, and KD to 0.005N*s/r.

4. Click "Updat".

5. Click "Send", and the motor starts to run

⚠： Pay attention to the initial position of the motor and secure the motor to avoid a large gap from the initial position, causing the motor to impact.

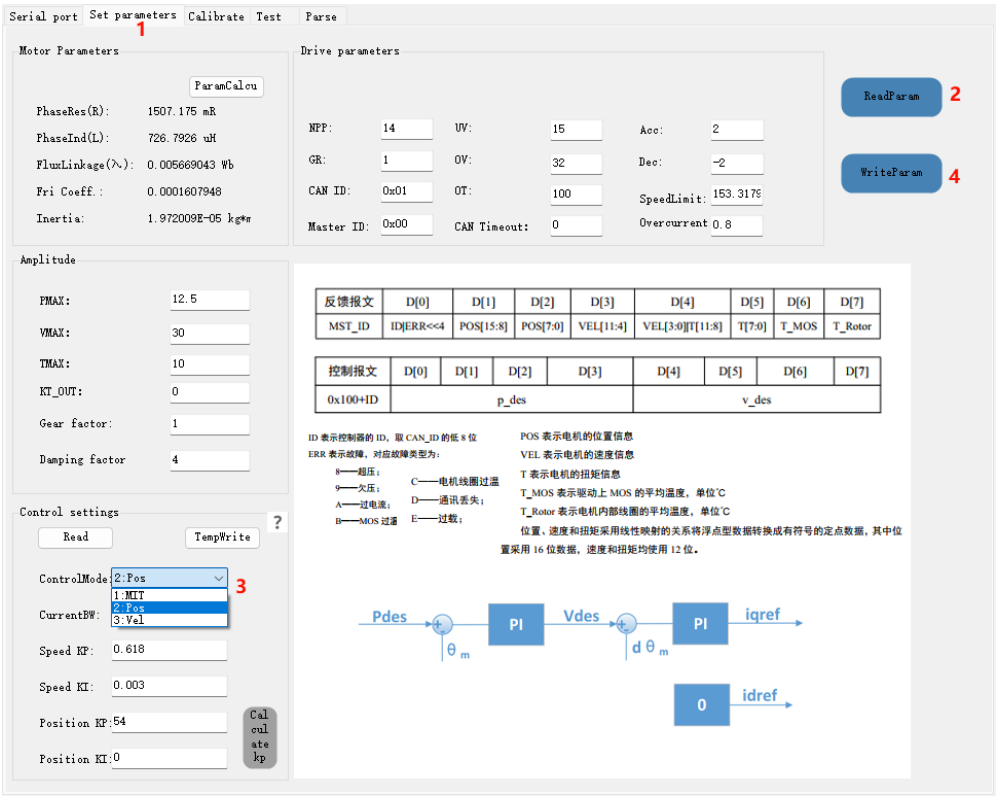
2.3 Torque Control



1. Click on the "Test" tab.
2. Click "MIT" above the control parameters.
3. Set the torque to 0.03N-m.
4. Click "Updat".
5. Click "Send", and the motor starts to run.

⚠： Secure the motor in place. Under no-load conditions, even a small torque will cause the motor to accelerate to the maximum speed rotation.

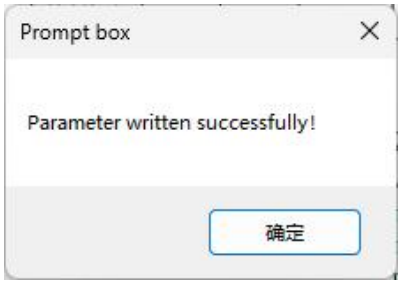
2.2 Position Velocity Mode

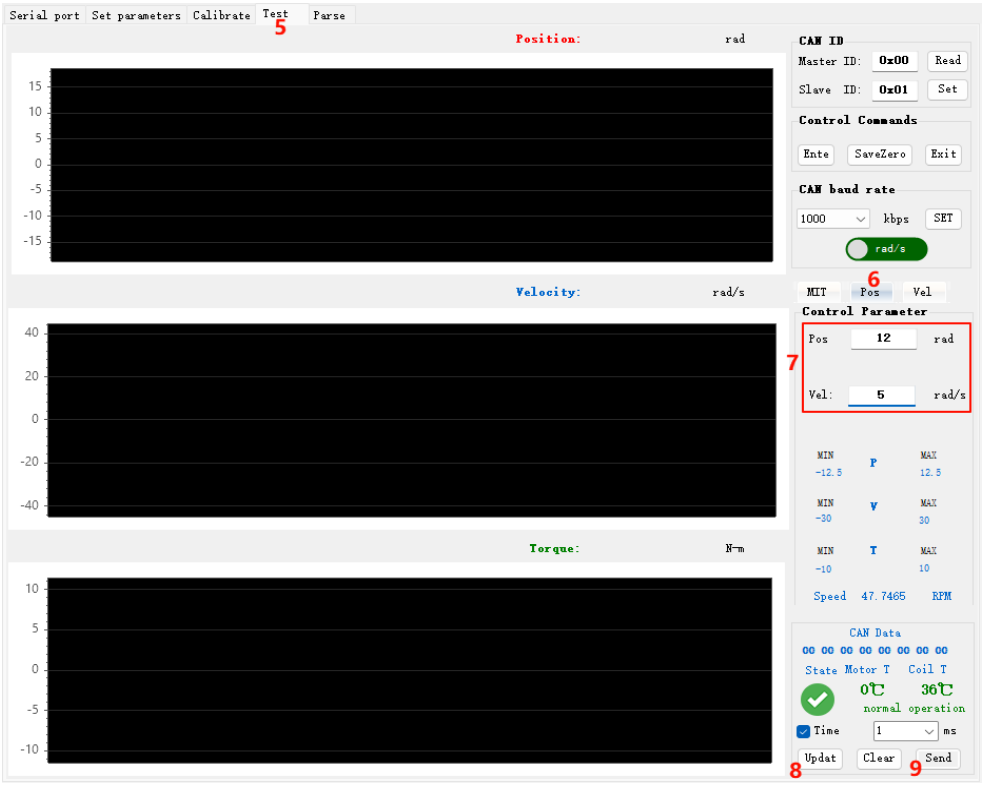


1. Click on the "Set Parameters” tab.
2. Click "ReadParam".

3、Select "Pos”；

4、Click "Write Param", and after the "Parameter Written Successfully" message pops up, repower the motor.





5. Click on the "Test" .

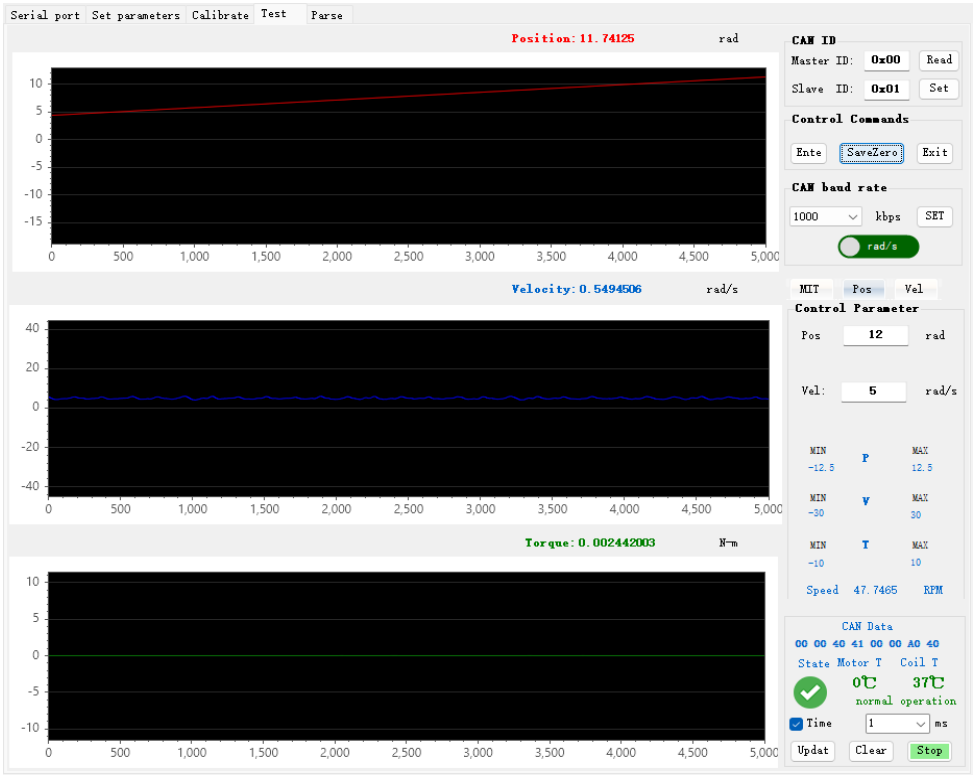
6. Click "Pos" above the control parameters.

7. Set the position to 12rad and the speed to 5rad/s.

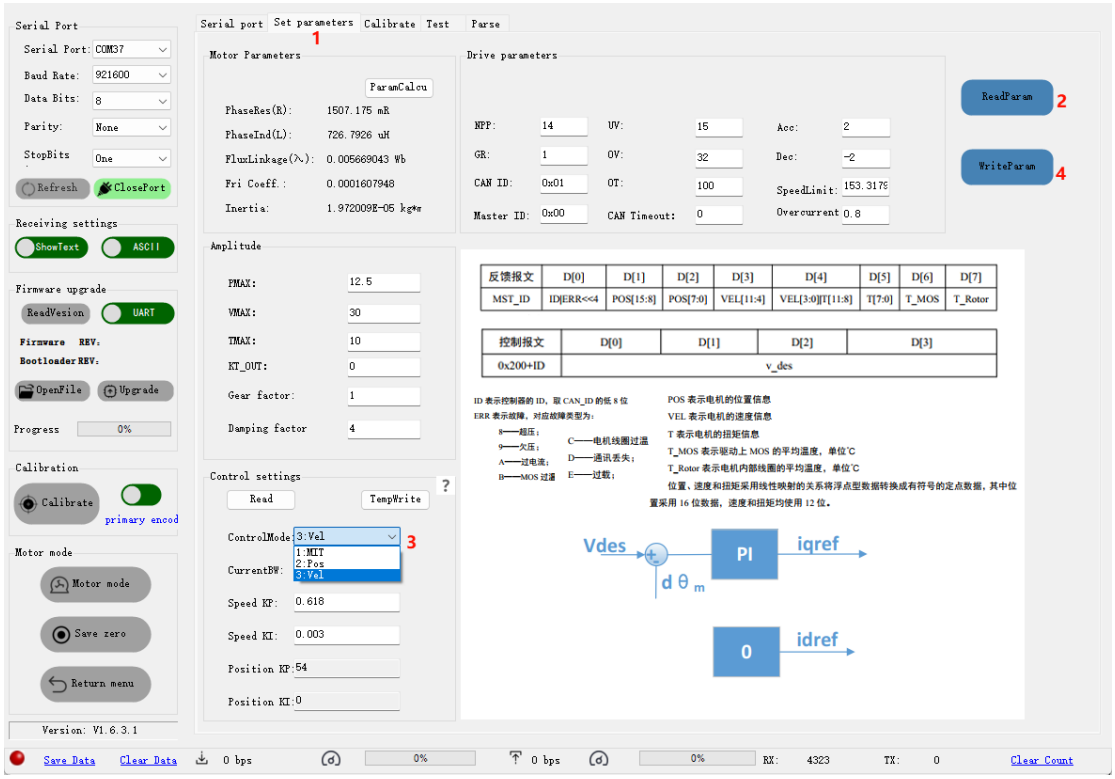
8. Click "Updat".

9. Click "Send", and the motor starts to run.

⚠：Secure the motor in place.

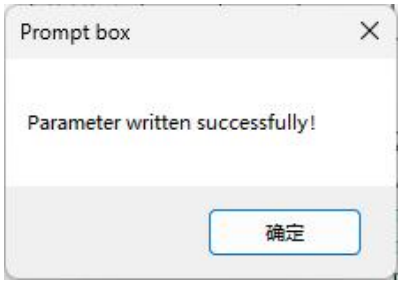


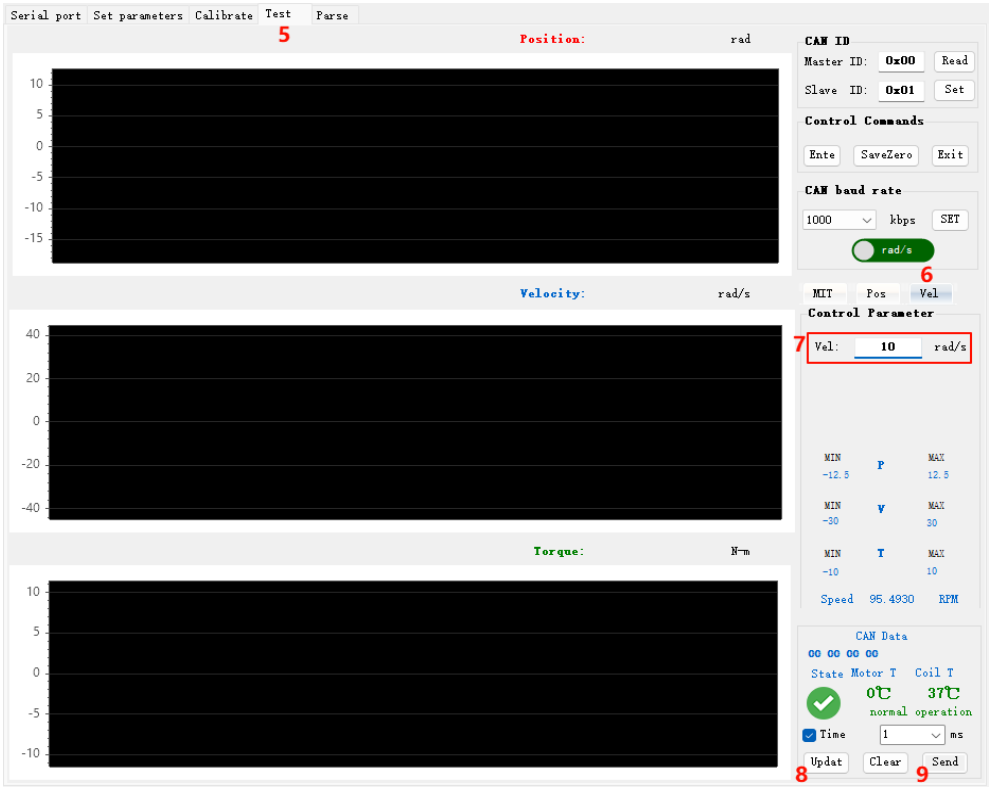
2.3 Velocity Mode



1. Click on the "Set Parameters" tab.
2. Click "ReadParam".
3、Select "Vel"；

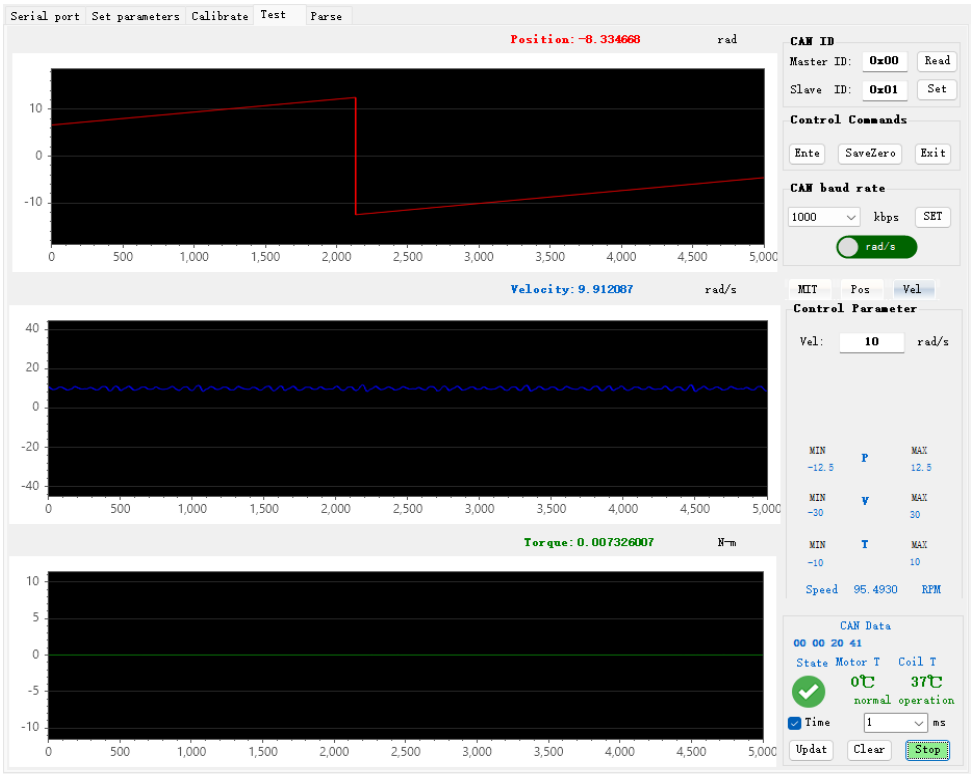
4、Click "Write Param", and after the "Parameter Written Successfully" message pops up, repower the motor.





5. Click on the "Test" tab.
6. Click "Vel" above the control parameters.
7. Set the speed to 10rad/s.
8. Click "Updat".
9. Click "Send", and the motor starts to run.

⚠：Secure the motor


Serial port
Set parameters
Calibrate
Test
Parse
Position: -8.334668
rad
Velocity: 9.912087
rad/s
Torque: 0.007326007
N-m
CAN ID
Master ID: 0x00
Read
Slave ID: 0x01
Set
Control Commands
Ente
SaveZero
Exit
CAN baud rate
1000
kbps
SET
rad/s
MIT
Pos
Vel
Control Parameter
Vel: 10
rad/s
MIN -12.5
P
MAX 12.5
MIN -30
V
MAX 30
MIN -10
T
MAX 10
Speed 95.4930
RPM
CAN Data
00 00 20 41
State
Motor T
Coil T
0℃
37℃
normal operation
Time
1
ms
Updat
Clear
Stop