

g1_comp_servo_service

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g1_comp_servo_service

Installation

1. unitree_sdk2

2. Send the g1_comp_servo_service to the g1 computer.

```
scp -r ~/g1_comp_servo_service unitree@192.168.123.164:/home/unitree
```

The computer default password is 123.

build

The entire compilation and routine execution need to be performed on a computer with the IP address 192.168.123.164.

```
mkdir build
cd build
cmake ..
make
```

If the compilation is successful, many executable files will be seen in the build directory. It is highly likely that the following executable files will be seen:

```
liang@xiaoliangstd:~/g1_comp_servo_service/build$ ls
CMakeCache.txt  cmake_install.cmake  Makefile          test_joint0_control  test_read_angle  test_servo_control
CMakeFiles      main                 test_calibration  test_joint1_control  test_read_yaml   test_servo_homePosition
```

test_calibration : This executable file is used for servo calibration, mapping the encoder values of the servo linearly to joint angle values. **Note: You must run this executable file before executing any other files.**

test_read_angle : This executable file is used for testing the mapped joint angle values. It can also be used to test the positive direction and the limit of joint.

test_joint0_control : This executable file is used to test the control of joint 0 after servo calibration.

test_joint1_control : This executable file is used to test the control of joint 1 after servo calibration.

test_servo_control : This executable file is used to test continuous control of all joints after servo calibration.

main : This executable file allows for the control of joints using DDS (Data Distribution Service).

run

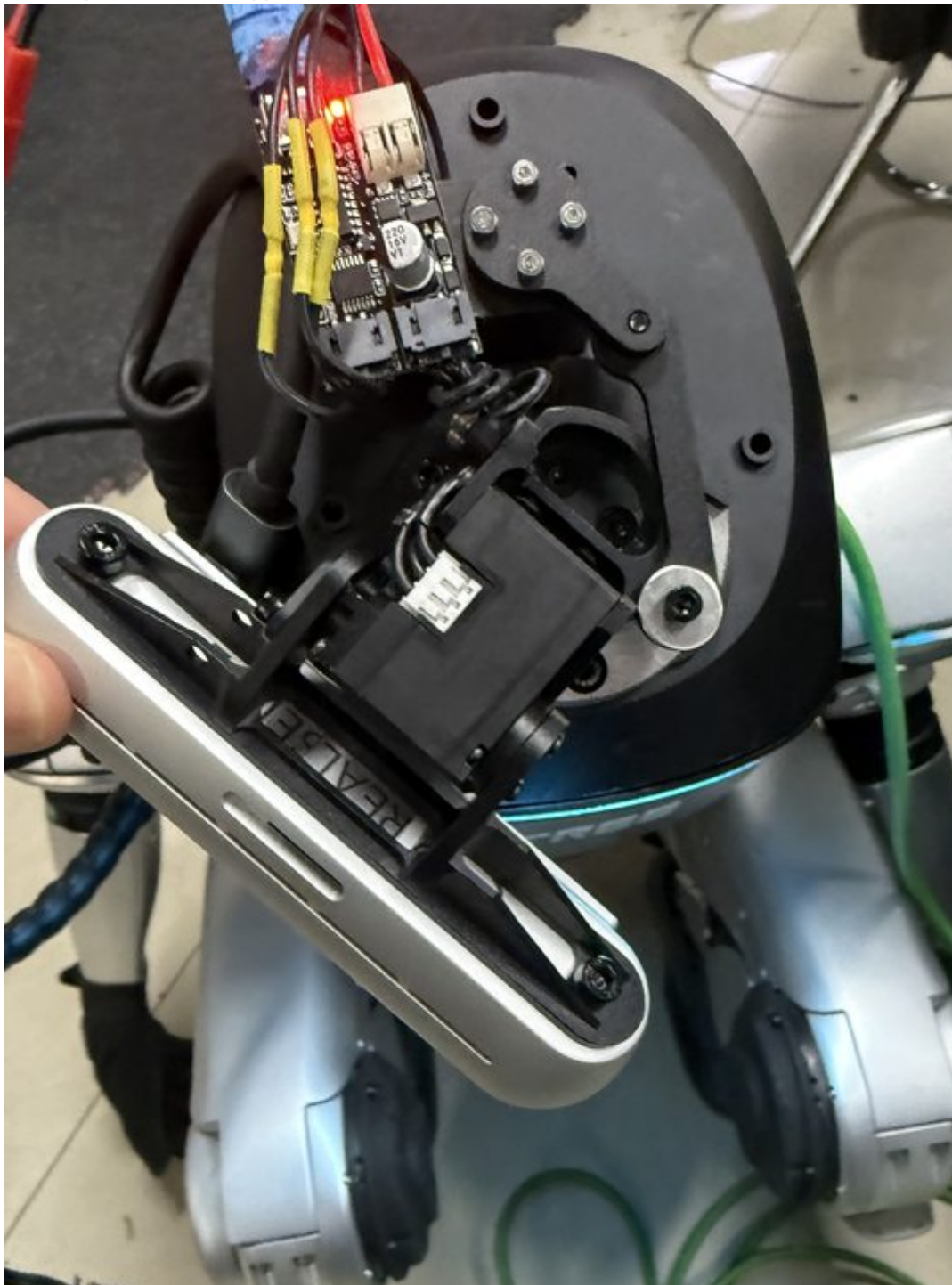
test_calibration

```
cd build
./test_calibration
```

Running this file will produce output similar to what is shown in the following image.

```
unitree@ubuntu:~/g1_comp_servo_service/build$ sudo ./test_calibration
[2025-03-18 11:32:53.162] [debug] Succeed to open the port /dev/ttyUSB0!
[2025-03-18 11:32:53.171] [debug] Succeed to set the baudrate 1000000!
Countdown finished!
servo 0 position : -77
Countdown finished!
Countdown finished!
servo 1 position : 2706
```

Running this file will trigger a total of three countdowns.



First, before the end of the first countdown, position joint 0 to the limit as shown in the image above.

Then, after the second countdown ends, joint 0 will return to the center. This indicates that joint 0 has been successfully calibrated.

Subsequently, the third countdown will begin. At this time, you need to press joint 1 down to the g1 head.



When all countdowns are completed, it means the calibration is finished, and you can proceed to use other routines.

test_servo_control

```
cd build
./test_servo_control
```

Running this routine, the joint will first move to the zero position, and then begin reciprocating motion.

test_joint0_control

```
cd build
./test_joint0_control
```

When running this routine, the terminal will output "Enter the desired angle:". At this point, enter the desired joint angle and press Enter. Note that you must run `test_calibration` before running this routine. The joint angle values you input must be within the limit values shown in the YAML file, as indicated in the image below.

g1_comp_servo_service

config



config.yaml

Open



```
1 dt: 0.02
2 servo0_calibration: 0
3 servo1_calibration: 0
4
5 joint0: [-50, 50]
6 joint1: [-20, 85]
7
8 direction: [1, -1]
9
10 has_calibrate: 0
11 |
```