

SIX-LEGGED TREE CRAWLING ROBOT

Prepared by: John Ling Teik Wen

ABSTRACT

A six-legged crawling robot is a mechanical vehicle that walks on six legs. Since a robot can be statistically stable with 3 or more legs, a six-legged robot has a great flexibility in how it can move. A six-legged robot was inspired by mimicking the insects with six-legs such as cockroaches, ants and grasshopper.

The six-legged robot in this project is able to crawl up a tree or tree branch besides of just walking on a horizontal plane. Researches had been done to gather the information before starting the project. Torque of servo motors were studied before the designing of the robot starts.

The design of the robot structure is another challenging part to this project. Design of the structure must be done carefully to prevent the robot from falling or collapse. Software programming was done to collaborate with the hardware.

Many experiments have been individually before joining them together. The experiments did include the RF signal test, servo motor PWM test, and robot's foot pad strength test. After that, a brief discussion on the results of the tests was covered in the next chapter.

Overall the project cannot be considered as fully successfully because only some of the objectives were met. The project is inconclusive for now because final testing is still going on when this report has been composed. Troubleshooting is done on the movement of the robot.