

ABSTRACT

Mouse is an input device on a computer that functions to move the cursor on the monitor, click, and scroll, the mouse that we usually use still uses a pedestal as a pedestal so that the sensor can read the movement of the mouse so that it can move the cursor.

The development of a virtual mouse can be done by creating a design that tracks the movement of the hand which will be converted into cursor movement. Complementary Filter to reduce noise and will be processed using an ESP32 microcontroller where the sensor function is to read our hand movements which will be converted into cursor movements.

Based on the test results obtained, when simulating the virtual mouse prototype MPU-9250 sensor data between using a complementary filter and without using a complementary filter, the error pitch value is 0.40275% at an angle of 0°, 0.66575% at an angle of 30°, 0.4295% at an angle of 60° , and 2.05425% at an angle of 90°, and roll error values of 0.1335% at an angle of 0°, 0.74% at an angle of 30°, 0.616% at an angle of 60°, and 2.9515% at an angle of 90°, and in testing the suitability of the cursor movement at virtual mouse prototype achieved 100% success in cursor movement compatibility.

Keywords: *Mouse, ESP32, MPU-9250, Virtual, Complementary Filter.*