

BallBot 3x3 –Functions



Tech:

- Arduino NANO microcontroller 16MHz 8-bit RISC
- 3 x 6v DC geared motors (150rpm)
- MPU6050 3-axis gyro & accelerometer (250rps)
- 3 x MX1616 MOS PWM Dual H-Bridge Drivers
- 48mm Omni directional wheel drive
- 3-D printed construction
- Adjustable wheel angle to match ball size

Features:

- Safe start, calibration with LED indicators (MM = 0)
- Topple detection at 60° from vertical
- When upright (top plate button switch):
 - Long press – force calibration (MM = 0)
 - 1 – enter ‘balance’ modes full PID (MM = 1)
 - 2 – enter ‘balance’ modes P only (MM = 2)
- When in MM = 1 or MM = 2, look for >5° from vertical, then start balance once at horizontal setpoint.
- When upside down (top plate button switch):
 - 1 – enter wheel demo mode (MM = 4)
- Nunchuk steering, ‘Z’ turn speed reduction
- Battery Low sensing with cut-off

Enhancements:

- None.