

1:1 Scale BB-D2 Droid

Overview

Developed a life-sized BB-8 droid (BB-D2) replica, focusing on its internal movement and control mechanisms.

Key Components (pictured below)

- Control: Arduino microcontroller.
- Motor Driver: Sabertooth dual 32A for movement.
- Motors: Two 24V DC for propulsion, two 35 kg servos for head.
- Power: Two 12V LiPo batteries.
- Communication: NRF24L01 transceiver for wireless control.

Development Phases

1. Design: Efficient space use planning.
2. Assembly: Combining motors, servos, controls in the frame.
3. Programming: Crafting motor and servo control software.
4. Testing: Intensive testing for refined, reliable operation.

Achievements

The project met all objectives, achieving a fully functional prototype that demonstrated effective control and mobility through wireless communication. Individual component tests validated the performance and efficiency of the system, leading to successful integration and operation tests.

Conclusion

The BB-D2 project enhanced robotics and automation application, offering insights into robotic wireless communications, showcasing successful electronic and mechanical engineering integration.

Sabertooth motor driver, Servo motor, Transceiver Module, DC motor, LiPo Battery



Internal mechanics

Exterior body

