HTT Big Robot Dog

Product Overview

HTT Big Robot Dog is a four-legged robot platform built for research, education, and development. It strikes a practical balance between performance, cost, and flexibility, making it suitable for universities, independent researchers, and hobbyists.

The robot features a solid mechanical design and a flexible software system. It works well for tasks such as movement control, walking pattern planning, autonomous navigation, and adding sensors. Its modular construction allows users to adapt it easily to different project needs.

- **HTT 33-channel RGB LED Driver** – Enables dynamic lighting for status indication and visual feedback.
- **HTT Multiphase Power Modules** – Deliver stable, efficient power to servo motors for consistent performance.
- **Web App Control via ROSBridge** – Provides a convenient browser-based interface for remote operation over Wi-Fi.

The HTT Big Robot Dog is a practical, extendable tool for advancing robotic systems development in the lab, classroom, or field.

Key Features

- **Modular Design**: Supports integration with a wide range of sensors and expansion modules.
- **Innovative Mechanical Structure**: Unique leg motor placement and linkage design reduce leg inertia and simplify kinematics.
- **Powerful Software Support**: Built on ROS Noetic with full Gazebo simulation support for digital twin functionality.
- **Flexible Control**: Browser-based **Web App** interface via **ROSBridge** for wireless operation.
- **Advanced Lighting System**: Integrated **HTT HT1300 series 33-channel RGB LED driver** for precise color control.
- **Reliable Power System**: Equipped with **HTT multiphase power modules** for stable servo motor actuation.

Technical Specifications

Physical & Mechanical Parameters

Parameter	Specification
Overall Dimensions	L(380mm) x W(250mm) x H(250mm)
Weight	3kg
Chassis Material	3D printed main structure (ABS recommended for heat resistance)
Actuation	12 servos (3 per leg)
Max Payload	Scalable for additional sensors and computing units

Motion & Control

Parameter	Specification
Gait Modes	Supports Rest and Trot gaits, switchable via control interface
Control Method	**Web App** via **ROSBridge** over Wi-Fi
Control Interface	Browser-based UI accessible from any device on the local network

Computing & Software Platform

Computing & Software Platform	
Parameter	**Specification**
Operating System	Ubuntu 20.04 with ROS Noetic
Core Software	ROS, Gazebo (Simulation), MoveIt!
Key Interfaces	Joint-space and task-space command transmission via **ROS Topics**; **ROSBridge** for Web App communication
Simulation Environment	Full Gazebo simulation support
Development Languages	Python / C++

Integrated Subsystems

Module	**Specification**
Web App Control	Browser-based interface connects via ROSBridge over Wi-Fi; sends ROS topics for motion commands and receives state feedback.
HTT RGB LED Driver	**HT1300 series** chip, **33 channels** for RGB-LED driving, max constant current **30mA**. Supports point correction, brightness adjustment, and complex lighting effects.
HTT Multiphase Power Module	Provides stable, efficient power conversion for servo motors under high loads.

Application Areas

- **Academic Research**: Algorithm validation in motion control, gait generation, multi-sensor fusion, and more.
- **Algorithm Development**: Mobile platform for SLAM, autonomous navigation, and obstacle avoidance testing.
- **Project-Based Learning**: Hands-on platform for understanding robotics hardware-software integration.
- **Human-Robot Interaction**: RGB lighting and Web App control enable demonstrations and interactive projects.

Contact Information

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