

RoboQuest Controller User Manual

1. Introduction

Welcome to the RoboQuest Controller system, a compact and intelligent robotic control platform designed for educational and beginner-level robotics projects. This controller enables the robot to respond to Bluetooth commands, allowing for precise directional control through user input from a mobile device. The RoboQuest Controller is powered by widely used components, including Arduino Uno, HC-05 Bluetooth module, L298N motor driver, and jumper wires.

2. Getting Started

Before using the RoboQuest Controller, ensure all components are properly assembled as per the instructions manual. Once the hardware is ready and the Arduino code is uploaded using a USB connection, the robot is ready to receive commands via Bluetooth.

3. USB Communication Setup

Use the provided USB Type-B cable.

- Connect the square end to the Arduino Uno.
- Connect the flat USB end to the computer.

This connection is used to upload the Arduino code via the Arduino IDE.

Note: The controller has already been uploaded with code. If you find any errors, only reupload the code.

Note: **Disconnect the motor power and Barrel Jack power (12V and 9V) before uploading the code.**

4. Powering the RoboQuest Controller

After uploading the Arduino code, the controller requires power to operate:

- A **12v battery** is connected to power the **L298N motor driver**, which controls the motors.
- A **9v battery** is directly connected to the **Arduino Uno Barrel Jack** to provide its operating voltage.

Note: **Ensure both batteries are connected securely after the code is uploaded.**

5. Bluetooth Setup & Pairing

1. Power on the system.
2. Turn on Bluetooth on your smartphone.
3. Open a Bluetooth controller app (e.g., "**RoboQuest App**").
4. Connect via the app to start sending commands.

6. Command Guide (Bluetooth Control)

Command	Action	Arrow Symbol
F	Forward	↑
B	Backward	↓
L	Left	←
R	Right	→
H	Servo Hitter	●

7. Safety Precautions

- Double-check all hardware connections before powering the system.
- Never short battery terminals.
- Disconnect 12V and 9V battery while uploading code.
- Keep batteries away from heat and moisture.
- Handle connections gently to avoid damaging pins.
- Do not operate on a wet or unstable surface.

Note: Three jumper wires are outside the RoboQuest controller that is for Servo Motor connections (connect as per colour combination).

9. Troubleshooting

Issue	Solution
Motors not moving	Ensure motor driver is powered and connected
Bluetooth not connecting	Recheck RX/TX pins and re-pair HC-05
Robot moves incorrectly	Adjust motor direction or check command logic
No code upload	Ensure USB is connected and port is selected

10. Support

For help, updates, or troubleshooting:

✉ Email: support@ablededucation.org

🌐 Website: www.ablededucation.org

★ Code Link - if you want any further changes as per your requirement:

[RoboQuest Controller Code](#)