# **XENTRINOBOT MANUAL 1.0**

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4WD mobile robots
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Motor and wheels
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Board
Driver modules
Circuit Connections of motors
Check polarity of IMU
Connect Lidar

# **Single Board Computer Guide**

OS image downloading (Ubuntu Mate) Software imager downloading SD Card imaging Running the OS for the first time in SBC Libraries and driver installations

# **Installing ROS**

Downloading from the github
Install software or libraries to setup ROS
Install the ROS package
Create workspace
Download xentrinobot ROS package in the workspace
Compile the ROS package

# **Installing XentrinoBot**

Downloading firmware from the github Installing libraries and main source code Installing firmware using platform.io Installing firmware using Arduino IDE

# **Configuration of Xentrinobot**

Modify the xentrinobot\_base\_config.h Set mobile robotics wheels platform Set the controller and drivers

## **Communicate ROS and Xentrinobot**

Testing motors, imu and encoders Tuning PID Calibrating IMU Checking Lidars

**PART II** 

**Getting started w/ ROS** 

**Xentrinobot Base Controller** 

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**Laser Sensor** 

**Transformation** 

**Creating a Map** 

**Autonomous Navigation** 

## Part III

Designing Robot
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Understanding the ROS source code and libraries
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