Garage Door Controller

Project Overview Document

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https://github.com/TeamPracticalProjects/Garage\_Door\_Controller/Terms\_of\_Use\_License\_and\_Disclaimer.pdf

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# OVERVIEW.

This document presents an overview of the *Garage Door Controller* project. This section outlines what the project is about. Section 2 describes the layout and contents of this repository – where files are located and what each file is about. Section 3 of this document provides a high level description of the theory of operation and the various components of the project.

The purpose of the *Garage Door Controller* is to allow a user to open and close their garage door using an App on their (Android[[1]](#footnote-1)) smartphone. The project also provides the status of the garage door (open or closed) and this status is displayed on the App. Connection between the app and the controller hardware is via the Internet. Therefore, the app can control and status the garage door from anywhere Internet is available.

In order to provide Internet communication, the *Garage Door Controller* needs WiFi access to the Internet. WiFi access is provided via a Particle[[2]](#footnote-2) Photon microcontroller module. In order to provide contactless sensing of the garage door position (open or closed), the *Garage Door Controller* needs to be located in the garage. Before embarking on this project, you must make sure that:

* There is a good quality WiFi signal where the *Garage Door Controller* hardware is to be placed;
* The location in the garage where the hardware is to be placed does not exhibit ambient temperatures below -4 degrees C (25 degrees F) or ambient temperature highs above 60 degrees C (140 degrees F); and
* There is an AC power source within about 10 feet of where the *Garage Door Controller* hardware is to be placed.

This project is released under an open source, non-commercial license. In order to use the materials in this repository, you must read and agree to all of the terms and conditions in the following document:

<https://github.com/TeamPracticalProjects/Garage_Door_Controller/blob/master/Terms_of_Use_License_and_Disclaimer.pdf>

This is an open-source project. This repository contains complete source files for all hardware and software. It also contains documents describing how to build this project, how to install this project, and how to use this project.

# REPOSITORY STRUCTURE AND CONTENTS.

This section describes the contents of this repository. This is an open source project. The files in this repository contain source code, (references to) hardware schematics and CAD files, and documentation.

## Repository Structure.

**GitHub.com/TeamPracticalProjects/Garage\_Door\_Controller**

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| -- “*README.md”*: the overview read-me file that is displayed on the GitHub

project page. The file format is *markdown* (.md)

| -- “*Terms\_of\_Use\_License\_and\_Disclaimer*”: the terms of use that you must agree

to in order to use the contents of this repository. The file format is *portable*

*document format* (.pdf)

| -- “*Overview*”: This document. The file format is *portable document format*(.pdf)

| -- “*.gitattributes*”: automatically provided by GitHub. You do not need to access this

file. The file format is *text*.

| -- **Software** (folder containing all software and firmware):

| -- **App** (folder containing the app software)

| -- **executable** (folder)

| -- “*GarageDoorController.apk*”: Android install package

for the app. Load this file onto your Android

smartphone and tap on it to install the app. The file

format is *android application package* (.apk)

| -- **src** (folder)

| -- “*GarageDoorController.aia*”: Source code for the app.

The source code is in the MIT App Inventor 2

graphical language. Import this file into your

MIT App Inventor 2 IDE in order to view and/or

edit the app source code. The file format is *AI2*

*source code format* (.aia).

| -- **Photon** (folder containing the firmware for the Photon)

| -- **src** (folder)

| -- “*GarageDoorController.ino*”: Particle Photon source code

for the firmware that is loaded onto the Photon. The file

format is *Arduino source code format* (.ino), which is

pure text. Copy the contents of this file into the Particle

Web IDE or the Particle Workbench in order to compile

the firmware and flash it onto your Photon.

| -- **Docs** (folder containing project documentation)

| -- “*Garage\_Door\_Controller\_Build\_And\_Installation\_Instructions*”: Document

that details how to build, install and test the project. The file format

Is portable document format (.pdf).

| -- “*Garage\_Door\_Controller\_User\_Manual*”: User manual for the App. The

file format is *portable document format* (.pdf).

## Suggested Use of the Documents.

We suggest that you read the documents (.pdf files) contained in this repository in the following order:

* *Terms\_of\_Use\_License\_and\_Disclaimer*: read and agree to everything in this document before proceeding further this this project.
* *Overview*: read through this document to familiarize yourself with what this project is about and ensure that you can successfully complete, install and use this project before you invest further in it.
* *Garage\_Door\_Controller\_Build\_And\_Installation\_Instructions*: follow the steps in this document to build the electronics, package the electronics, install the firmware, install the App software, mount the hardware in your garage, and test that the project is working.
* *Garage\_Door\_Controller\_User\_Manual*: consult this manual to learn how to use the App.

# OVERVIEW THEORY OF OPERATION.

1. At this time, the App is only available for Android devices. Our apologies to iOS (iPhone) users. [↑](#footnote-ref-1)
2. <https://www.particle.io> [↑](#footnote-ref-2)