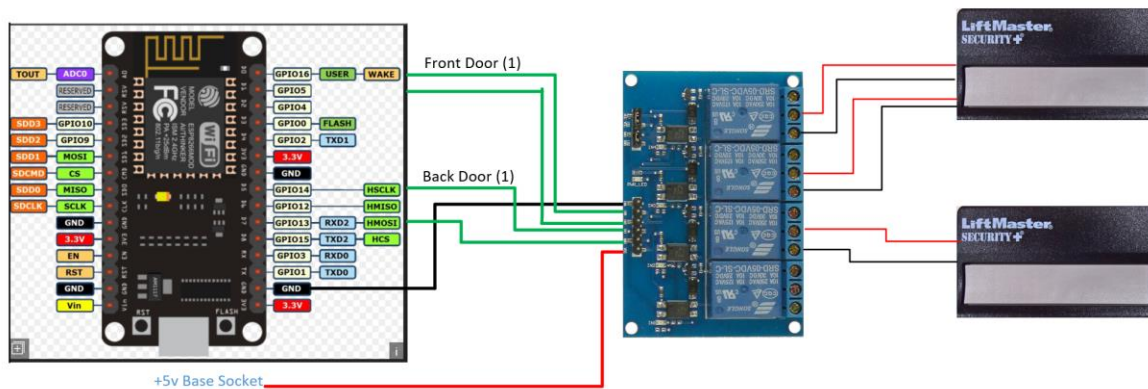


Voice Activated Doors (v1.0)

[Open Sesame](#) is a product that some people with limited mobility have today to make it easier for them to open and pass through doors. To open the door, the individual presses a button on a hand held remote. Some have asked us if we could voice activate the Open Sesame door system and we have provided that solution. At the very core, the solution resembles the design for a hospital bed with direct wired remote. An ESP8266 microcontroller drives some relays and those relays close the switches in the opener. Note it takes two relays per opener given the DPDT switch inside the opener. Here is the schematic for the voice activated door opener.



The Open Sesame door activation solution uses GPIO Pins 16 and 5 to open the Front Door, and GPIO pins 14 and 1 to open the Back Door. Inside each LiftMaster remote is a push button switch that is essentially double pole double throw. This required two GPIO and two corresponding relays for each door opener. The good news here is it offers redundancy since no single point of failure should result in unintended door opening.

There are some safety and security considerations that should be addressed. First from a safety point of view, you would not want the doors to open outside of your control. In this design, there is redundancy in the hardware given it takes two relays to turn on in order for the door to open. (So, no single point of failure in the hardware should result in the door being opened). Let's say someone knows the command you give to open the door, and let's say it is summer and the windows are open. The potential is there for someone on the outside of the house to give a command through an open window to open the door and gain access to the house. One way to mitigate this is by putting a WeMo Smart Mini plug on the voice activated controller to remove power from the voice activated control box at times when the house is empty or when people are sleeping.