Greg and Rebecca Anger – Detailed view (v1)

By Bill Weis

Requirements:

1. Be able to voice control their door
2. Be able to voice control their Flex-A-Bed model FLEX185

Solution – High Level:

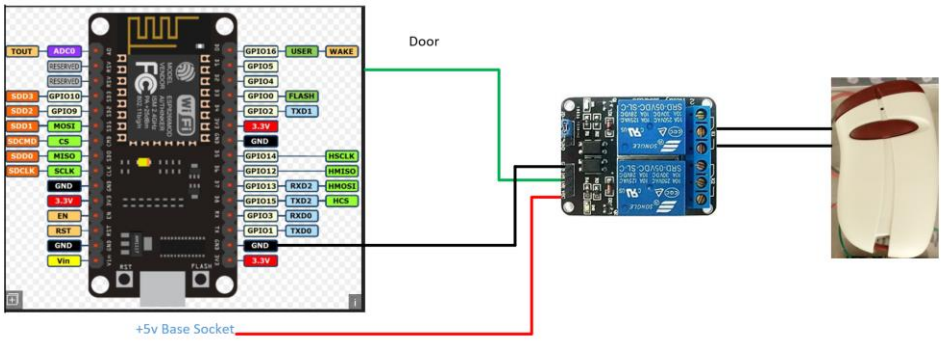
1. Designed a microcontroller-based Voice Activated solution that enables Rebecca to open their door hands free
2. Designed a microcontroller-based Voice Activated solution that enables them to voice control the 6 functions of their Model FLEX185 Flex A Bed Hi Low Queen Adjustable Bed. (Head Up, Head Down, Feet Up, Feet Down, Lift, and Lower)

Details of the Solution

1 – Voice Control the door – Greg and Rebecca have an Open Sesame product installed on their door. After hearing about DeAnn's voice activated solution for her door, they explained that this would also be beneficial for Rebecca.

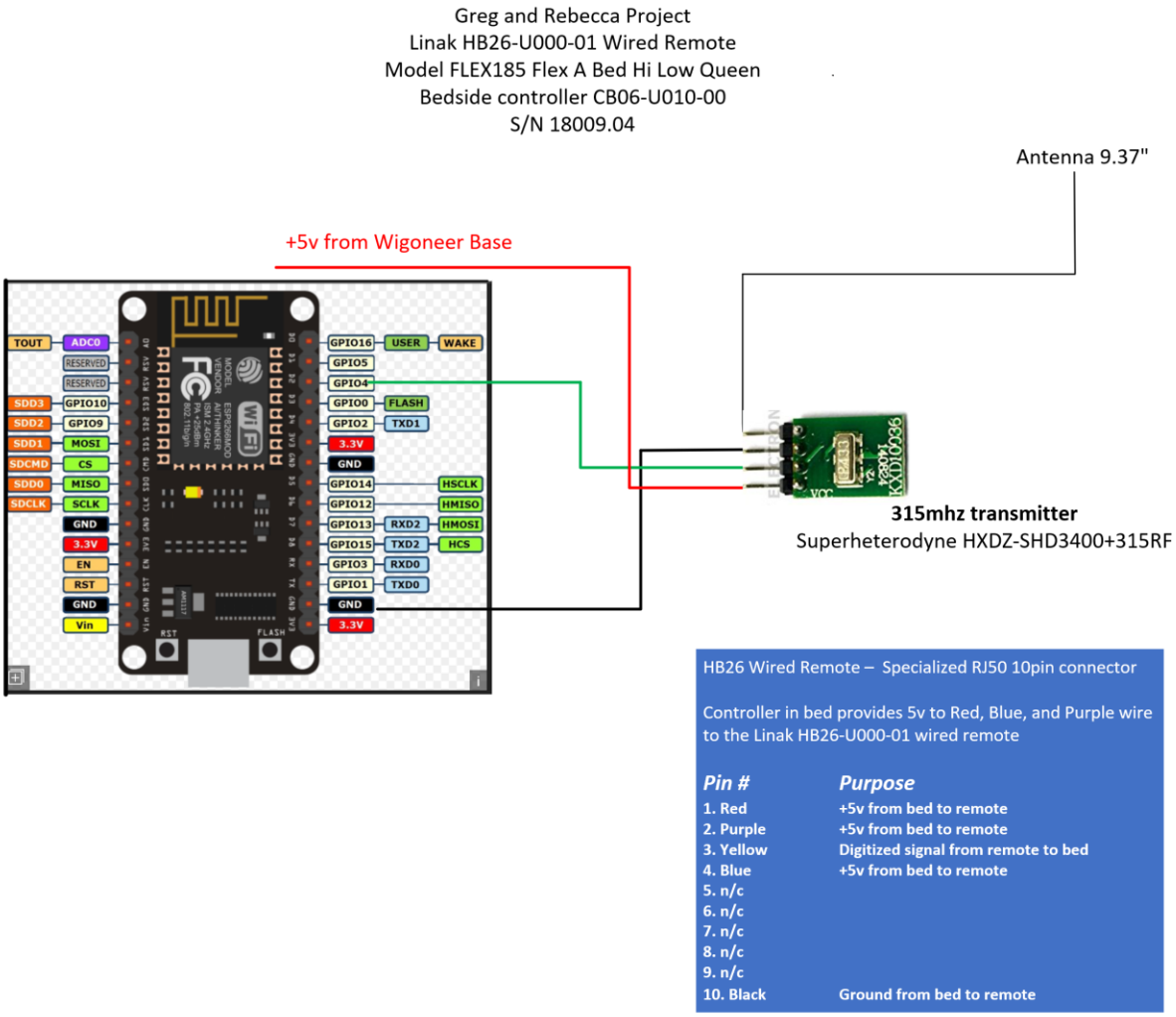
The ESP8266-E12 NodeMCU has a sketch that accepts commands from Alexa which in turn energizes a relay. Once the relay is energized, it closes the contacts within the hand held remote which triggers the door to open. We added a WeMo switch to give them the ability to turn the device on/off using voice commands as well.

Here is a Visio diagram of the solution.



2 – Have the ability to voice control their bed Because of Rebecca's limited mobility, they wanted her to be able to use her voice to control their Flex-A-Bed Model FLEX185 Hi Low

Queen adjustable bed. The bed came with a Linak HB26-U000-01 wired-remote that was connected to a Linak CB06-U010-00 control board. This wired-remote differs from other remotes we've worked with in that it did not simply close contacts when function buttons were depressed. Instead the Linak HB26 wired-remote sends a digital signal through the yellow wire to the bed control board. Each function button on the remote generated a unique digital signal. We used a Saleae logic analyzer to capture the timings for each of the function buttons. Furthermore, we realized that the CB06-U010-00 control board was already capable of accepting RF generated commands. Based on experience with other Linak bed controllers, we made the assumption that the RF frequency was 315mhz and we developed a Microcontroller solution that would transmit the digital signal for each of the desired functions. This was also the first project that leveraged our new **Limited Mobility Solutions** Amazon Skill.



Resources

[Amazon Echo]

Alexa Support (Contact Support via the Amazon Alexa app - can have them call your number)
Wemo Support Phone number for Support = 1-844-745-wemo (9366)