Irene R. – Detailed view (v1)
By Bill Weis

Irene R. – ALS

Requirements:
1. Be able to voice control her Golden recliner

Solution – High Level:
1. We developed a voice activated controller that enables Irene to give voice commands of various durations to move the head rest and foot rest ends of her Golden recliner.
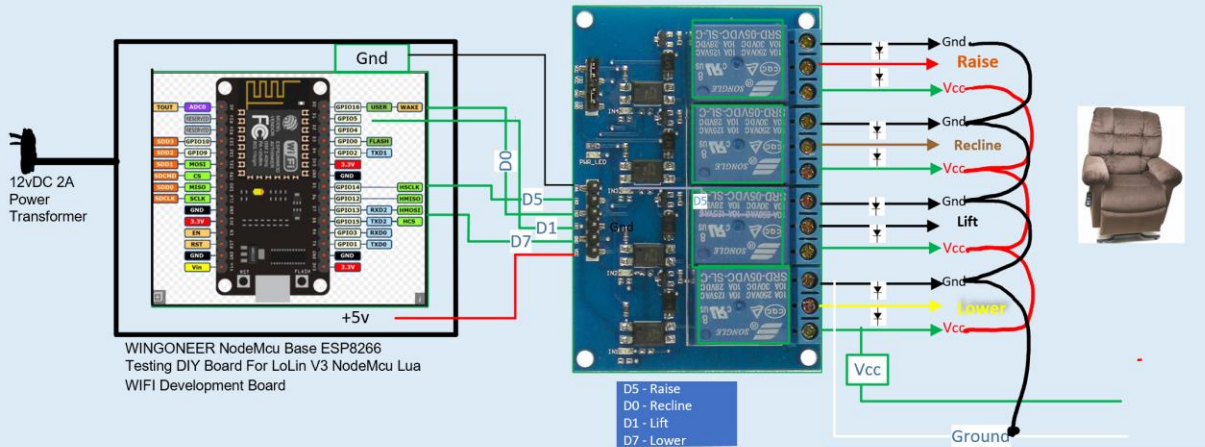
Details of the Solution

1 – Voice Control her Golden Recliner – Irene has ALS and would like to be able to voice control her Golden lift chair/recliner.

1 – Detailed Solution - We designed a voice activated controller that allows Irene to adjust the backrest and footrest using voice commands. Since the wiring design of the chair is not very complex, we had to also provide a switch box so her husband could switch between a hand controller and the voice activated controller. If in the future Irene's voice degrades to a point where she needs a communicator device, we will help design a custom pageset that will enable Irene to focus on an object on the communicator screen and the chair will respond by moving, just as if a voice command were given.
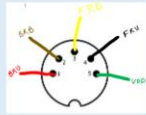
Here is a Visio diagram of the solution.
lee

Voice Controller for Irene R. - Golden Recliner PR510-SME-DSV-PHA
Bill Weis 8-11-2022
S/N 20084.12

12vDC 2A
Power
Transformer

Gnd

D0

D5

D7

D1

+5v

WINGONEER NodeMcu Base ESP8266
Testing DIY Board For LoLin V3 NodeMcu Lua
WIFI Development Board

Gnd

Vcc

Gnd
Raise
Vcc

Gnd
Recline
Vcc

Gnd
Lift
Vcc

Gnd
Lower
Vcc

Ground

D5 - Raise
D0 - Recline
D1 - Lift
D7 - Lower

For testing purposes, if no relay board is available use a 10k
resistor to pull up the GPIO pins to 3.3v so you can validate
things are working as seen on a oscilloscope or logic analyzer.
This is because the sketch for mechanical relays uses open
drain on the GPIO pins.

Wires From Remote to Relays
Red -> S1 -> Back Rest Raise
Brown -> S2 -> Back Rest Recline
Black -> S3 -> Lift Foot Rest
Yellow -> S4 -> Lower Foot Rest
White -> GND Tied to all black wires on the relay
Green -> VDD (29v) Tied to all Red wires on the relay

Includes Schottky SR2010 flyback diodes to extend the
life of the relay contacts due to motor current