

Dave Andrus Project – Detailed View (v1)

By Bill Weis

Dave A. – Becker’s Muscular Dystrophy

Requirements:

1. Be able to voice control his bed (Invacare Full Electric Homecare Bed model 5410IVC with pendant 1115290). (Dave has already implemented home automation with the exception of his bed which we will provide.)

Solution – High Level:

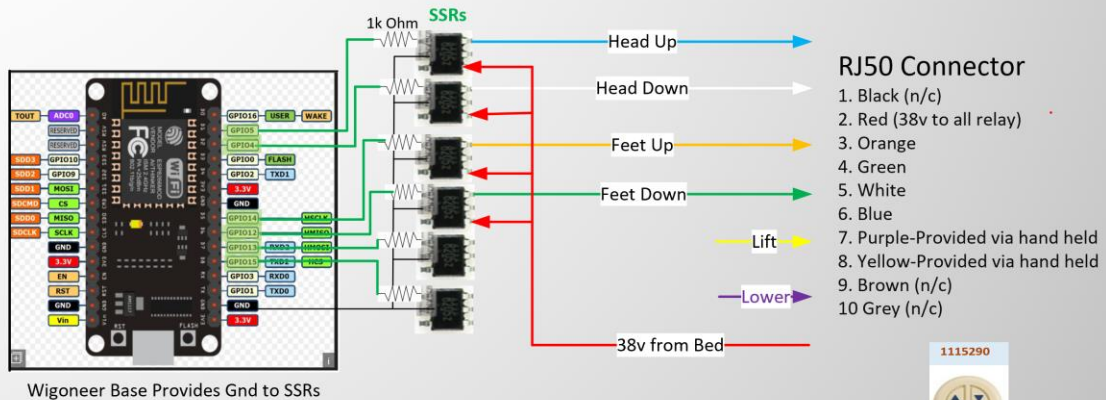
1. Designed a microcontroller-based Voice Activated solution that provided the desired functions of Head Up, Head Down, Feet Up, Feet Down. All four of these functions are available via voice commands as well as using a pendant. Lift and lower functions are available via pendant only.

Details of the Solution

1 – Voice Control his bed – The bed is an Invacare Full Electric Homecare Bed model 5410IVC with pendant 1115290 that is direct wired to the bed. The approach was to have an ESP8266 microcontroller drive 4 solid state relays which replaced the 1115290 pendant. The 4 functions of Head Up, Head Down, Feet Up, Feet Down were each controlled by one of the 4 relays. We also provide an RJ50 connector on our bed controller to allow for a hand held 1115290 to be added, therefore both voice commands as well as manual use of the pendant will control the bed. The pendant is the only way that bed lift and bed lower functions due to safety reasons.

Our bed controller responds to commands from Alexa as well as Google which provides redundancy as well as giving the customer the opportunity to see which smart speaker understands them better.

Dave A. Project
 Invacare Homecare Bed 5410IVC
 Bill Weis 8-3-2019
 S/N 18035.12



This is a full electric bed with head up and down, foot up and down, and lift and lower bed. We provide a hand held pendant that plugs into our bed controller as a backup to the head and foot functions. The pendant also provides the only method of lift and lower bed for safety reasons.



Resources

[Amazon Echo](#)

[Alexa Support](#) (Contact Support via the Amazon Alexa app - can have them call your number)

[Google Home getting started](#)

[Google Home Help Forum](#)

[Google Home Support](#) Phone number for Google Home hardware support = 855-971-9121 (24/7 days a week)

[Logitech Harmony Knowledge Base](#)

[Logitech Harmony Support](#) Phone # for Support = 866-601-5644 (M-F 8am to 6pm PST)

[Lifx](#)

[Wemo Support](#) Phone number for Support = 1-844-745-wemo (9366)