

# TomS Project – Detailed view (v1)

By Bill Weis

## TomS – Duchenne Muscular Dystrophy

Requirements:

1. Be able to voice control his bed (Invacare Semi-Electric 1115288 pendant)
2. Be able to voice control his TV and Dish channels
3. Be able to use voice to launch YouTube videos

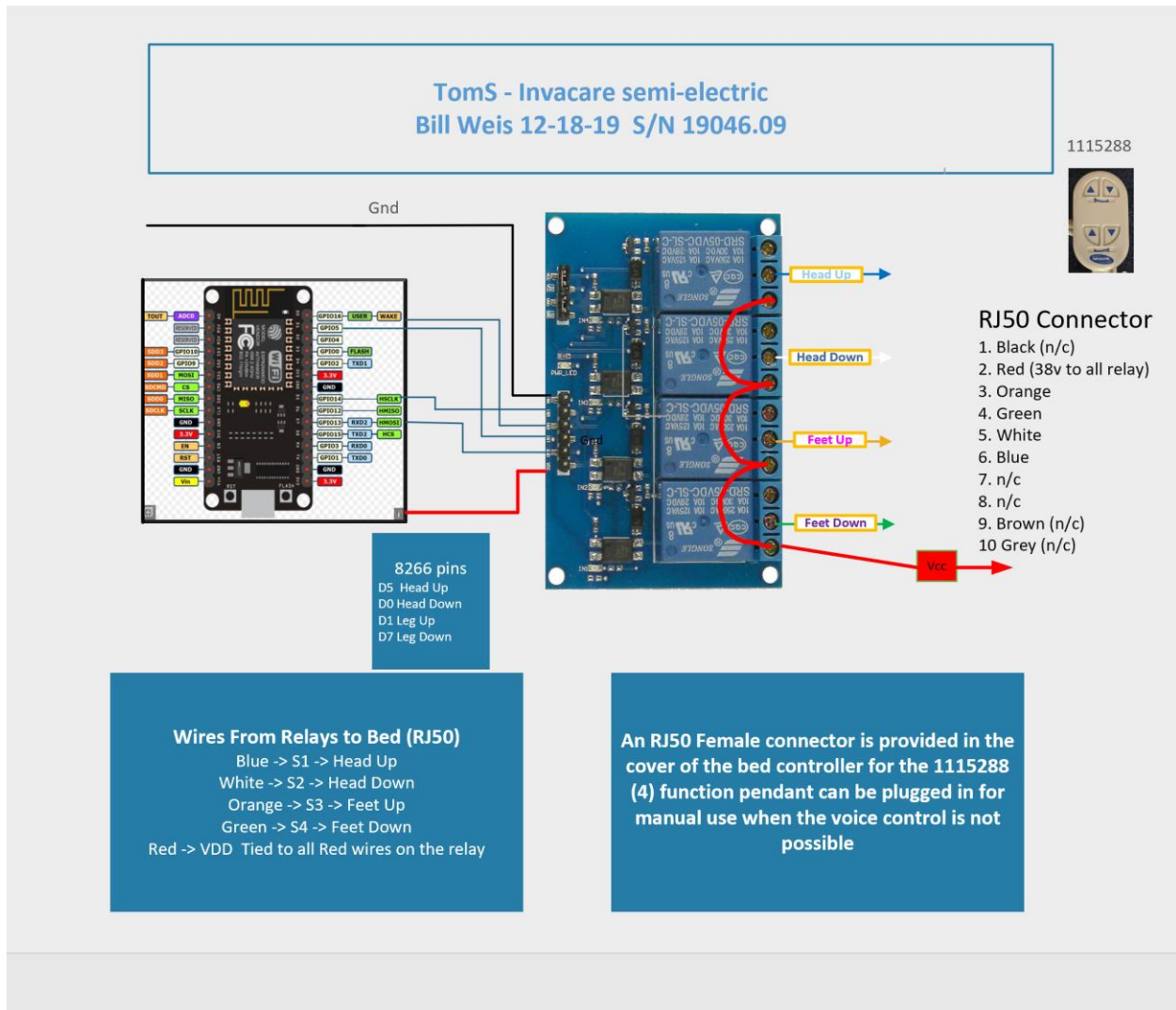
Solution – High Level:

1. Installed an Amazon Echo and a Google Mini where both can control a custom developed bed controller to allow Tom to control his Invacare bed using voice commands
2. Installed a Amazon Fire TV Cube so Tom can use voice to control his TV including volume, turning the TV on/off, be able to watch programs on their DISH satellite.
3. Installed a Google Chromecast to enable Tom to launch YouTube videos by issuing voice commands through the Google mini.

### **1. Be able to voice control his bed (Invacare Semi-Electric 1115288 pendant)**

Tom has Duchenne Muscular Dystrophy locating and operating the hand held remote is becoming difficult. We designed a voice activated bed controller which will give Tom the ability to control his adjustable bed with a variety of commands. All commands run for a predetermined length of time and Tom can choose the command that best suits his needs. The head of the bed can be raised/lowered in 3,4,5 &8 second intervals. It will require multiple commands to go from a flat position to a full up sitting position, but this approach is done for safety reasons. The foot end of the bed can be raised/lowered in 3, 4 or 5 second intervals. A nice feature of the Invacare bed design allows for us to provide a dual control environment. Both voice-activated control as well as adjustments to the bed via the pendant are possible. Thanks to the design of the Invacare bed, it is possible to have the option of providing bed control via a pendant without having to swap cables under the bed. This is handy in cases where WiFi might be disrupted or if a caregiver chooses to adjust the bed manually.

Here is a schematic of the bed controller design



2. **Watch Programs on DISH including Netflix Programs** – When it becomes difficult to manually work a TV remote, it is nice to be able to have control of all the functions of the TV through voice commands. The Amazon Fire TV Cube makes it possible to turn on/off the TV, change volume, and mute the TV. It also supports a number of cable and dish solutions. Tom has the DISH network and though voice commands to the Amazon Fire TV cube he can launch programs on NetFlix and other channels.

- 3. Watch YouTube Videos Using Voice Commands** – A very nice feature of the Google Chromecast/Google mini combination is the ease at which you can use voice commands to launch YouTube videos. Often times when you ask for a video in a particular category, it will respond with a selection of videos on the screen which you can select by responding by voice with a specific number that it assigns to each video.

## **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)