Vikram Project – Detailed View (v1)

By Bill Weis

Requirements:

1. Be able to use voice control for placing and answering phone calls
2. Be able to voice control a recessed ceiling light
3. Be able to voice control the TV
4. Be able to use voice commands to control his Invacare bed

Solution – High Level:

1. Provided an Amazon Echo Dot Gen3 and an Amazon Echo Connect so Vik can make and answer incoming phone calls
2. Installed a Lifx BR30 multi-color bulb in the ceiling fixture
3. Installed a Logitech Harmony Hub to control his TV
4. Developed and provided a voice activated bed controller and added Google support so Vik can control his bed from Alexa and Google

Details of the Solution

1 – Be able to use voice for placing and answering phone calls

We provided an **Amazon Echo Connect** device which gives Vik the ability to answer incoming phone calls on his land line by voice.

2 - Voice control of a recessed ceiling light
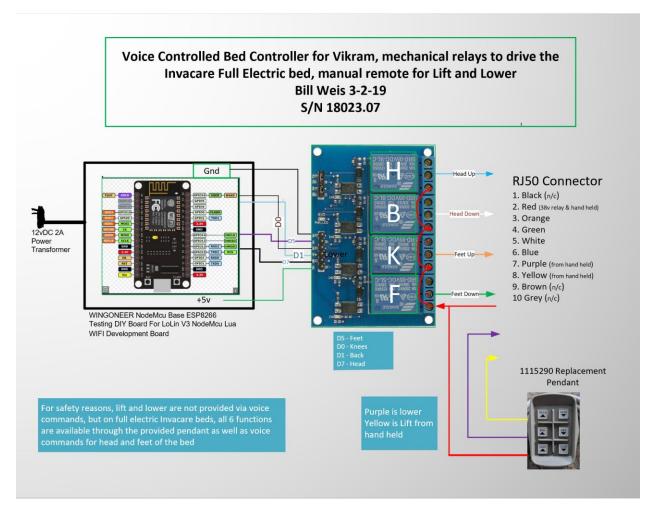We provided a **Lifx BR30 Multi-Color bulb** so Vik could have voice control over a light in his room.

3 – Voice control Vik's TV
We provided a **Logitech Harmony Hub** so Vik could control his TV

4 – Voice Control his bed – The Invacare bed has a 1115290 pendant that is direct wired to the bed. The approach is to have an ESP8266 microcontroller drive 4 mechanical relays which replaces the original 1115290 pendant. The 4 functions of Head Up, Head Down, Feet Up and Feet Down are each controlled by one of the 4 mechanical relays. We also provide an RJ50 connector to allow for a hand held 1115290 to be connected to our voice activated bed controller, therefore both voice commands as well a manual use of the pendant will control the bed. The bed lift and lower functions are only available via the hand held 1115290 pendant that

we provide and for safety reasons we do not provide voice commands for lift and lower. Those functions are typically only performed by a caregiver anyhow.

The functional engineering drawing below shows the connections between the microcontroller and the relays, as well as the relays to the bed.

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)