

Miki Tate Project – Detailed view (v2)

By Bill Weis

Miki Tate - ALS

Requirements:

1. Be able to voice control her Pride Vivalift! Tranquil PLR-935 lift chair and be able to switch from the voice solution to the manual remote in case of internet outage.
2. Be able to voice activate her Invacare full electric bed
3. Be able to voice activate her ability to answer incoming phone calls on her land line

Solution – High Level:

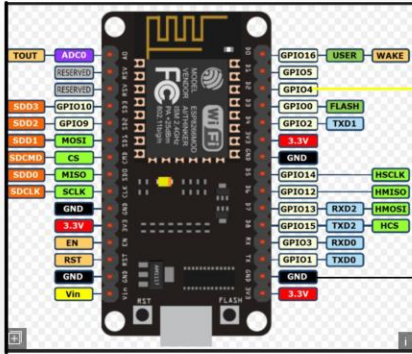
1. We designed a voice activated solution for her Pride recliner as well as a switch box that allows Miki to revert back to the manual remote in times of internet or power outages.
2. We designed a voice activated controller for her Invacare full electric bed
3. We provided a Amazon Echo Connect to enable her to answer incoming phone calls

Details of the Solution

1 – Voice Control her recliner – Miki has a Pride VivaLift! Tranquil PLR-935 lift chair and the impact of ALS has made it very difficult for her to use the hand controller. Moving her hand to reach the remote which has to be duct taped to a table next to her chair has become a painful chore each time she needs to move to a different position. This chair has some very nice comfort features such as an inflatable pillow on the head rest and at the lumbar. These are features which are important to someone who spends a lot of time in the chair. Unfortunately, she cannot enjoy the benefit of these comfort features because of the impact of ALS and her inability to work the remote. Miki asked if we could provide her with a voice activated alternative to the hand remote. We first contacted Pride to see if they had a voice solution and they did not. We then went ahead and designed a voice solution for Miki's chair which gives her the ability to control all 10 functions that would normally have been performed using the remote. In times of internet outages, the switch box pictured below the schematic allows for Miki or a caregiver to switch back to the manual hand control.

The next page contains the basic schematic of the lift chair controller design and switch box.

Miki Tate Recliner Project
 Pride VivaLift Tranquility PLR935
 Hand Controller HSW310-VA
 S/N 20073.06



HSW310-VA Hand remote has 5 Pin male DIN Connector

Pin #	Purpose
1. Brown	LEDs for each button on remote
2. Yellow	Pin 12 of PIC16F1828
3. Red	+5v
4. Black	Ground
5. Blue	Pin 10 of PIC16F1828

For our solution, we only needed to connect our controller to the recliner using DIN connector pin 4 for a common ground and pin 5 so we can provide the digital signal to the chair. Our control box replaces the hand remote. The control box in the chair is a HHC Moto Motion CM310 L06-20201670028

This is the 5 pin DIN male connector



The pinouts for the 5 pin DIN male connector are:



There is one linked connector - 5 pin DIN female. Click here for details.



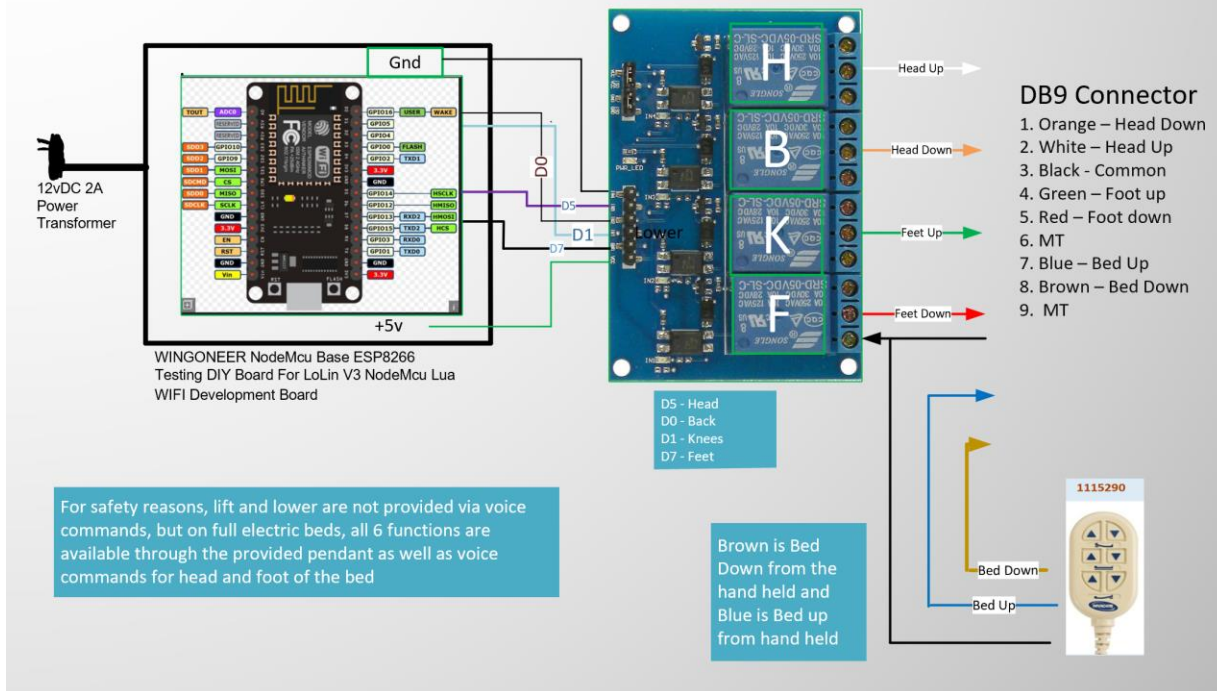
- 2. Voice activate her Invacare full electric bed-** Miki has an Invacare full electric bed model 6630DS. We provided Miki with the ability to use voice commands with both Google and Alexa to control raising and lowering the head and foot ends of the bed. We do not provide voice commands for bed lift and bed lower due to safety concerns. All 6 functions for the bed can be performed using the hand pendant which attaches to our bed controller, so in situations where the internet is down the bed can still be controlled.

The basic schematic for the voice activated bed controller is on the next page

Voice Controlled Bed Controller for Miki Tate, mechanical relays to drive the Full Electric bed Invacare bed model 6630DS. It has a manual remote for Lift and Lower (Invacare 1115290 that connects to an RJ50 in the top cover)

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S/N 19051.10



3. Be able to answer incoming phone calls over her land line – Miki has a land line and would like to be able to answer incoming phone calls hands free. We provided an Amazon Echo Connect which will allow Miki to answer incoming phone calls using the Amazon Echo dot.

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)