Make yourself at Ohm

Monday, March 15, 2010

Two Wii Nunchucks with one arduino

In the midst of a senior design project, it was decided that we wanted to use 2 Wii Nunchucks as accelerometers to measure orientation of a human arm (1 for the upper arm and 1 for the forearm). In understanding I2C communication, there is no way to use 2 Nunchucks on the same I2C bus without some sort of external circuitry. (All nunchucks have the same slave address, leaving nothing to distinguish between the two when attempting to receive data).

I drew up a simple and cheap solution to interface two (or more) Wii Nunchucks on the same I2C bus. This is useful for projects that require multiple accelerometers at a cheap price.

Here is all you will need:

2 npn switching transistors (I used 2N3904)
2 current limiting resistors (I used 200 Ohm)
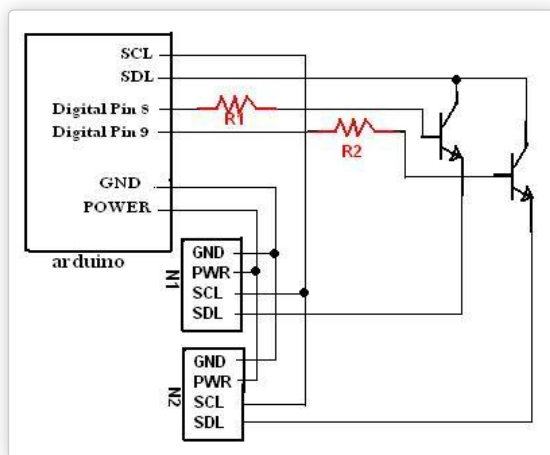
Just connect all nunchuck Power (PWR), Clock (SCL), and Ground (GND) wires to the same corresponding spots on your microcontroller. The microcontroller's SDL can be connected to the outputs of both transistors.

Programming notes:

In order to perform a read, all you have to do is set the pin of the corresponding transistor to HIGH (5v in our case), write/read to the I2C bus, then set that pin to LOW (0v)to disconnect that nunchuck from the bus. Also, during start up you must initialize each nunchuck individually in order to operate both nunchucks correctly.
Good luck,
B Dwyer (aka: johnnyonthespot)

Posted by Brian Dwyer

5 comments:

Irbabe January 15, 2013 at 3:27 PM

Hi there,

I'm very interested in that solution!
What do you mean by "during start up you must initialize each nunchuck individually"?
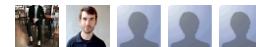
Best regards,
Lr

Reply

Brian Dwyer   March 25, 2013 at 7:04 PM

In the WiiChuck Library there is a function called Init() which will initialize the variables for each nunchuck object you create. You must initialize each when connected to the correct nunchuck in order for future update() calls to work

Followers

Followers (5)

Follow

All Posts

Brian Dwyer

Electrical Engineer/Enthusiast

View my complete profile

correctly.

-BD

Reply

Brian Dwyer   March 25, 2013 at 7:05 PM

I can send you the WiiChuck library if you are interested (for Arduino)

-BD

Reply

Frank August 9, 2013 at 7:30 AM

Doing a search for 2N3904 brings up a lot of different options with different specs. Can you provide more information on this part, or better yet a part number from someplace like digikey? Thanks

Reply

> Replies

Brian Dwyer   October 10, 2013 at 1:19 PM

Most specs will do just fine. You can also use a multiplexer to do the same function, with higher reliability.

Reply

```
Enter your comment...
```

Comment as: Unknown (Goo ▼   Sign out

Publish   Preview   ☐ Notify me

Newer Post   Home

Subscribe to: Post Comments (Atom)