

## USB Easy Button

by [powerfulmojo](#) on July 3, 2009

### Table of Contents

USB Easy Button .....	1
Intro: USB Easy Button .....	2
Step 1: Program your U-HID Nano .....	2
Step 2: Take the Easy Button Apart .....	3
Step 3: Put the U-HID In The Button .....	4
Step 4: Let the Wire Out .....	5
Step 5: Make It Do Something .....	5
Related Instructables .....	6
Comments .....	6



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Name's Andy Allen.

## Intro: USB Easy Button

Those [Easy Buttons](#) from Staples are awesome, but they have one small flaw: they don't actually do anything useful. It's my aim to change that.

I'm going to build a USB Easy Button. I found most everything I needed from [jro's project](#) and a flickr photoset by [tommybear](#). Plus, I've been dying to try one of these [U-HIDs](#). I also describe this process [on my blog](#).

What you'll need:

- An [Easy Button](#) (or [Boton Facil](#) if it suits you better) \$4.99
- A [U-HID Nano](#) and USB Cable (with shipping) \$42.00
- A Modular Harness for the U-HID (optional) \$9.00
- Soldering iron & solder
- Wire (if you didn't buy the wiring harness)
- Dremel or a chisel
- Hot glue or silicone
- Small phillips screwdriver
- PC running Windows XP



### Image Notes

1. This is really all that was missing from the original button.

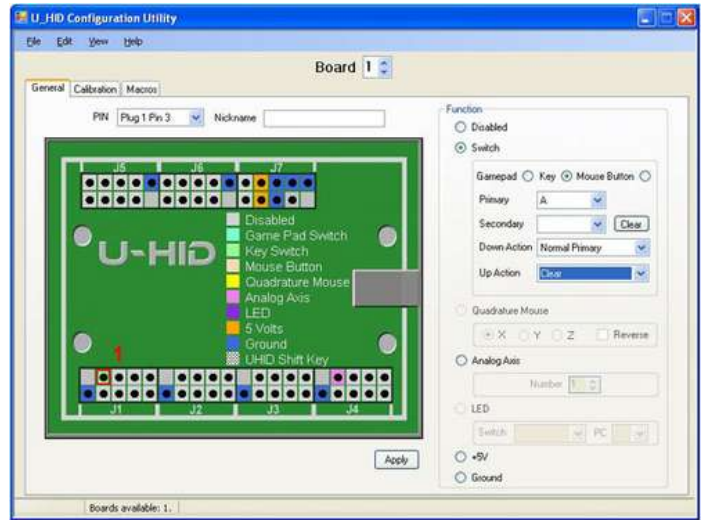
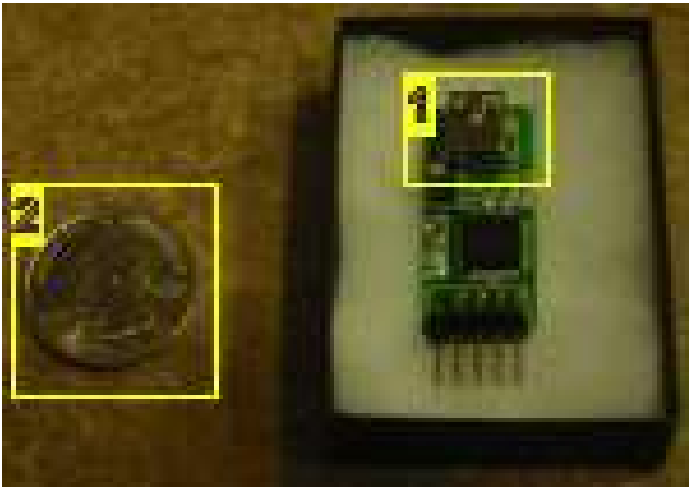
## Step 1: Program your U-HID Nano

Plug the USB cable and wiring harness (if you're using it) into the U-HID Nano. If you're going to have the button send a single command like me, just leave the black (ground) wire and the gray (pin 10) wire long enough to reach the PCB. We won't be using the other 7. If you want to use the button to close more than one switch at a time (for example, to send Ctrl + Alt + Del), leave one wire per button, plus the ground wire.

I hooked the wires up to a temporary switch at this point for programming the thing. You could go ahead and hook it up to the Easy Button. Just scan down a little to see which contacts to use.

You program the U-HID Nano with U-Config, a software package available from the manufacturer. It's a pretty easy process, and the [Technical Manual](#) was easy to read.

I'm not going to go into the details here except to note that a [driver install](#) and [firmware update](#) were required to get it working on my machine. Both of those processes are [clearly documented](#) on their site. I set it up so that when pin 10 goes to ground, it will send the macro "L Alt, F8". It seems to send the scancodes fast enough that my machine counts it as a combination keypress.



#### Image Notes

1. USB Port
2. This is half the size and less than 1% of the cost of a U-HID Nano

## Step 2: Take the Easy Button Apart

Turn the button over, and you'll see four black pads on the bottom. Pull them off to expose the screws. Be sure to save the pads so you can stick them back on. Go ahead and take the batteries out while you're there.

#### Desolder Everything

Remove all 4 screws to release the silver ring and red button from the assembly. You'll be left with just the guts of the machine. Inside, you should see a white button. That is the heart of the Easy Button and the only part of the original electronics we're actually going to make use of.

All of these things have to go, so desolder and discard them:

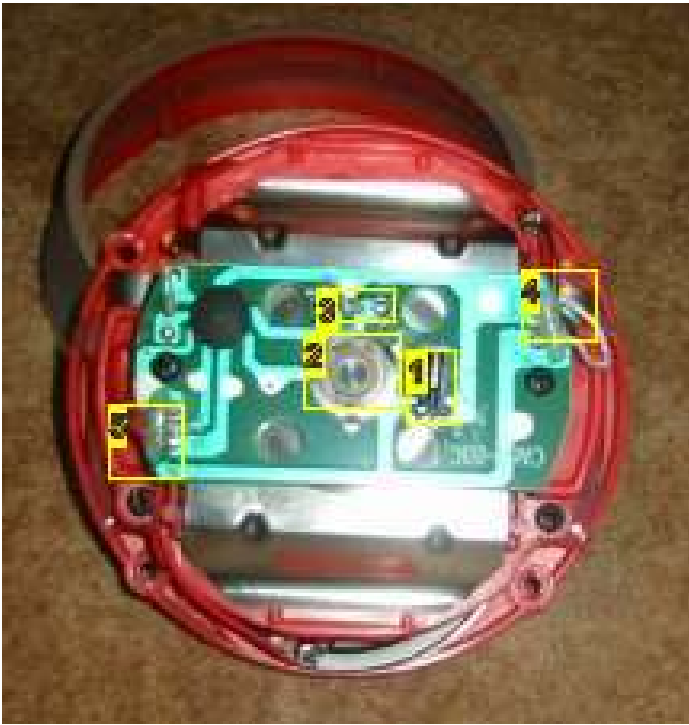
- The black capacitor
- The resistor closest to the button
- The red speaker wires
- The black & white power wires

If you don't know what those things are, don't sweat it. Take a look [tommybear's photos](#) on flickr. He's better at this than I am.

Remove the 2 screws, and take the PCB off of the assembly. Set the metal spring aside. We want to keep that because it pops the button back up after it's pushed. Besides, it gives a satisfying CLICK that I like.

Remove the 4 screws that hold the little mezzanine level on. You may have to pry it up just a bit if the hot glue below is sticking it down. Take the metal slugs out and discard them. They're just stuck in there with a little hot glue and you can pick them out without ruining anything. I guess you could leave them if you have the room & like the heft. Remove the speaker too.

Use your dremel or a chisel to take out any little plastic bits that are in your way. Just remember that you have to leave the 4 posts that hold the mezzanine level up.



#### Image Notes

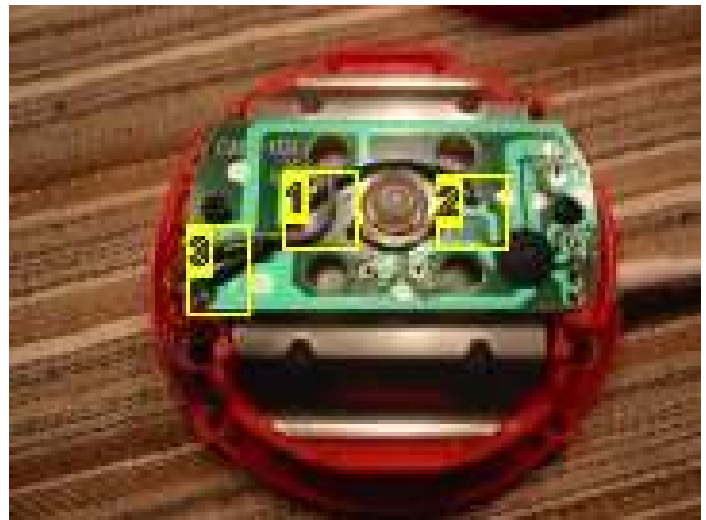
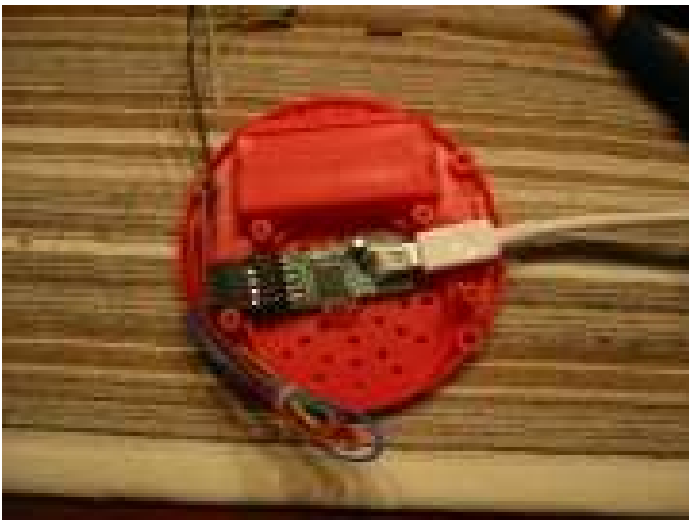
1. Get rid of this.
2. This is the actual button. We're keeping this.
3. Get rid of this
4. Get rid of the black & white wires
5. Get rid of the red wires.

### Step 3: Put the U-HID In The Button

Find a way that the whole U-HID assembly will fit inside the button, then use some hot glue or silicone to stick it in place.

Replace the mezzanine, metal spring, and PCB. Now comes the soldering. The U-HID Nano is going to just sit there and wait for pin 10 to touch the ground pin. We're going to use the normally-open momentary switch inside the Easy Button to interrupt that connection, so the circuit is only closed while the Easy Button is depressed. Solder the gray and black wires as shown.

It would be a good idea to test it at this point to make sure it works before you put everything back together. Use a little hot glue to make sure the wires do not interfere with the holes in the PCB. Those are what keep the button aligned properly, and if they're blocked, you can't push the button.



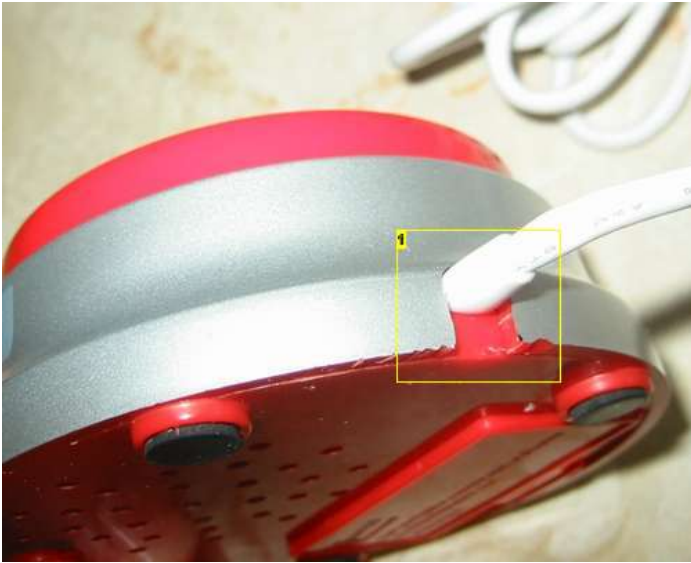
#### Image Notes

1. The gray wire goes on the pad closest to the button
2. The black one goes here
3. A little dab of glue will make sure the wires don't slip around and interfere with the button's operation.

#### Step 4: Let the Wire Out

Cut a slot in the silver ring that's just big enough for the wire to get out of the enclosure. I made mine a left-handed Easy Button (made to sit in the left side of the computer). You could hook yours up backward or cut a channel through the battery compartment and have it come straight out the "front."

It should only go back together one way: with the battery compartment farthest away from you, the "easy" label should be right-side up and the Staples logo on the ring will be directly toward you. Replace all 4 screws in the bottom of the case and use a little hot glue to stick the rubber pads back on. You're done with the hardware: you've built an Easy Button that actually does something.



##### Image Notes

1. I used a dremel rotary cutting bit to slice a slot in the ring.

#### Step 5: Make It Do Something

My button is going to be on a Windows XP machine. Here's how I make it run a program:

- Create a folder in your Start Menu called Easy Button
- Create one shortcut inside the folder called thatwaseasy.lnk
- Right-click the shortcut and select Properties.
- Click the "Shortcut key" field and press the hotkey combination you told the Easy Button to send (in my case, Alt + F8).
- Set the target of the shortcut to the program you want the Easy Button to run.

This shortcut has to be in your start menu or on your desktop. You can set a hotkey for any shortcut, but it only works if the shortcut is in the right place. No idea why.



##### Image Notes

1. This is really all that was missing from the original button.

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Hack)** by iculus

## Comments

2 comments

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**crc09** says:

Aug 26, 2010. 4:22 PM [REPLY](#)

Could this instructable be re-worked for this? <http://www.allelectronics.com/make-a-store/item/KP-22/12-BUTTON-KEYPAD//1.html>



**powerfulmojo** says:

Aug 27, 2010. 10:05 PM [REPLY](#)

That would be tough: the U-HID nano can only send 8 codes, so you would have to pick your favorite 8 keys. But you could get a regular U-HID ([http://www.u-hid.com/home/overview\\_board.php](http://www.u-hid.com/home/overview_board.php)) and have plenty of keys available.