

# 757 Labs

([www.757labs.com](http://www.757labs.com))

Honda Steering Wheel Audio Controls (Hacked to drive Pioneer decks)

by: Tele Monster (Ethan)

2001 Honda Accord EX controls driving Pioneer AVIC series head unit, no after-market devices used.

## **WARNING! WARNING! WARNING!**

**This document is just a record of how a modification was made, and is not intended to be instructions for doing so yourself. This is intended for those experienced in electronics and is not a how-to guide. Do not attempt this on your own unless you understand it and are willing to risk damaging your vehicle and/or stereo.**

## **Introduction**

Honda vehicles come from the factory (at least on some models) with steering wheel mounted controls for the audio. The controls feed a signal wire going to the factory stereo that allows adjustment of volume and another function.

The factory audio controls use resistance, similar to the after-market wired remote controls from Pioneer and Sony. The big difference is the resistance values.

There exist after market controllers that will read the resistance from the factory controls, then present a modified resistance to the after-market stereo. These devices most likely use a PIC or AVR style microcontroller, and are often programmable to change the function. Originally I was looking to build one of these, since the parts wouldn't cost more than \$15, but in the end it was easier to modify the existing factory controller.

## **What was done**

Removing the factory controls was easy. Two screws and the assembly comes off. A pushbutton on the 2 conductor connector will allow disconnection of the plug. One of the conductors goes to ground, and the other leads to the connector on the radio harness (described later).

From the factory, the Honda controls present a 3.5k resistance when nothing is pressed.

This is problematic for Pioneer decks. Up is .3k, the Audio/ch is .7k and down is .1k (From my notes). These values don't jive with Pioneer decks, and I imagine wouldn't fit with Sony either.

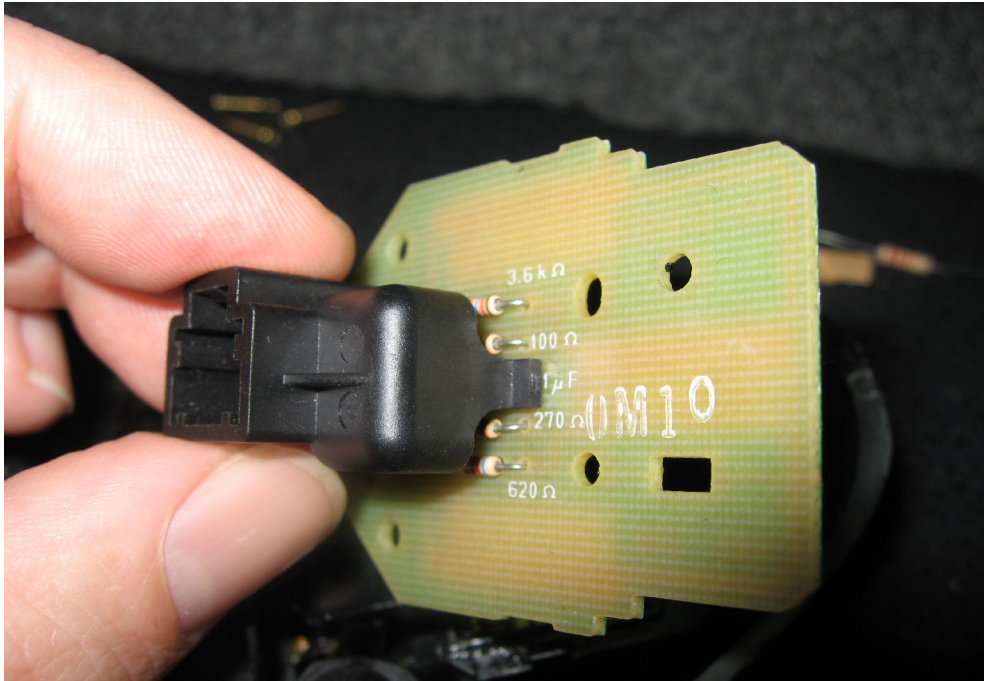


Honda audio controller, note 4 factory resistors.

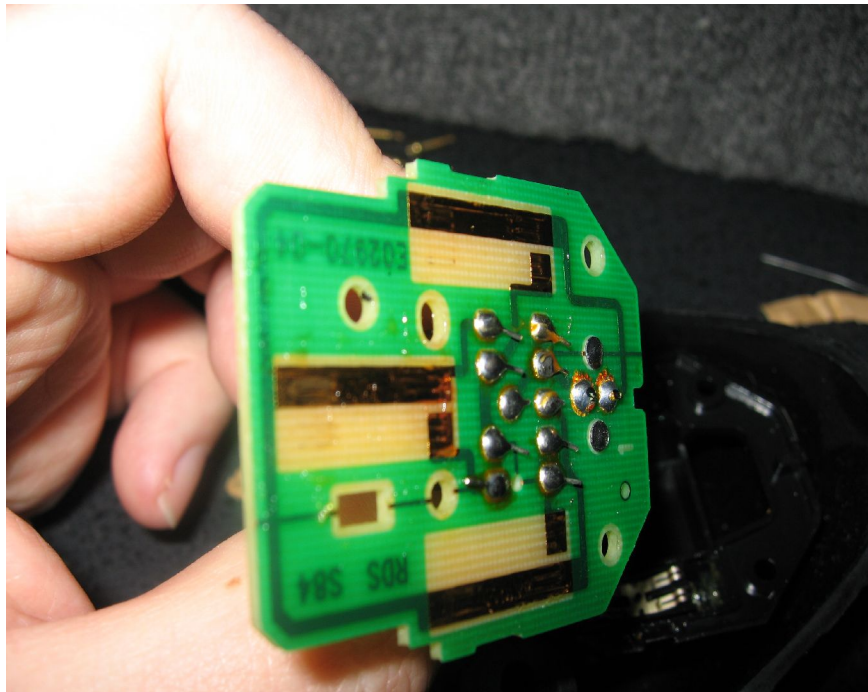
In the case of the Pioneer, the functions I wanted to control are Vol up, Vol down, and source. Up is 16.8k, src is 2.2k and down is 23.6k from documents I found on the internet (see reference section at the end). I picked the closest common available resistor value to these, and in my case they all worked. 2.2k, 22k and 15k.

After removing the factory button controller, I removed the 3 screws that allow the circuit board to be removed. I removed all 4 resistors that come from the factory (their values are silk screened on the top of the board for future reference).

The real Pioneer and Sony controllers use a series of resistors to build the values, but with only 3 buttons it was easier to just skip and drop the resistors right on the board. Paying attention to how the board goes together, I placed 1 resistor on the component (top) side of the board, and two on the bottom where the plastic button assembly would miss them. It's totally a crappy job, and the resistors were bigger than needed for this project, but it works and I will never have to see them again.

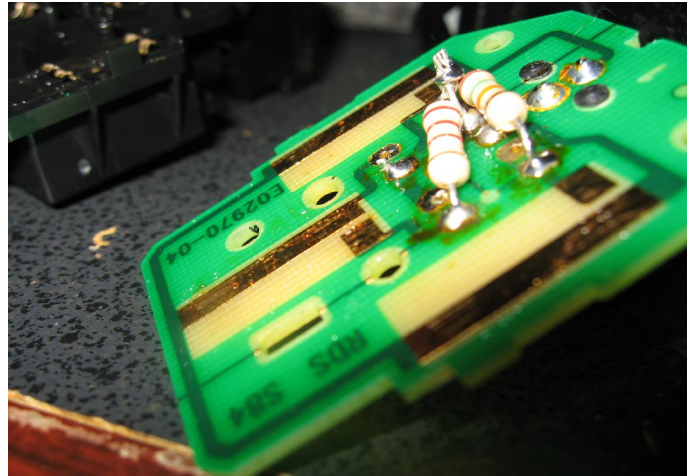


One side of factory board (before modification)

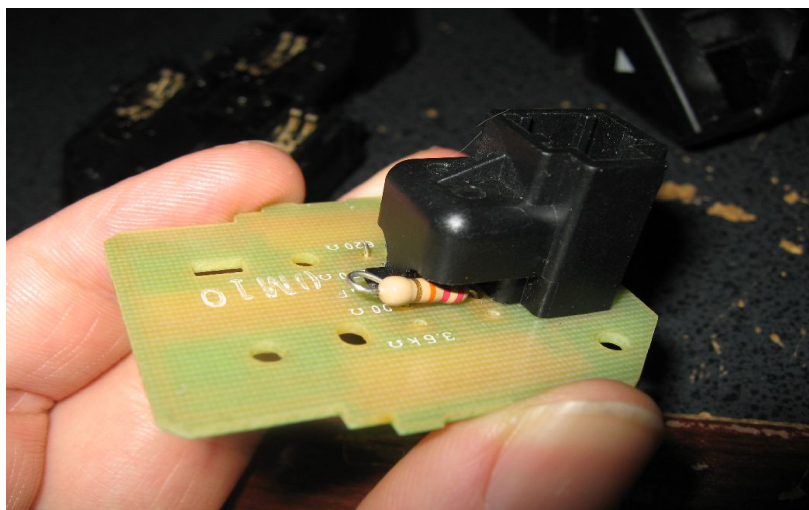


Solder side of board. The component in the middle between top 2 and bottom 2 resistors is a capacitor. I left it in place.

All 3 resistors are setup to go from ground to one side of the switch contact. The other side of the switch contact goes to the lead behind the radio.



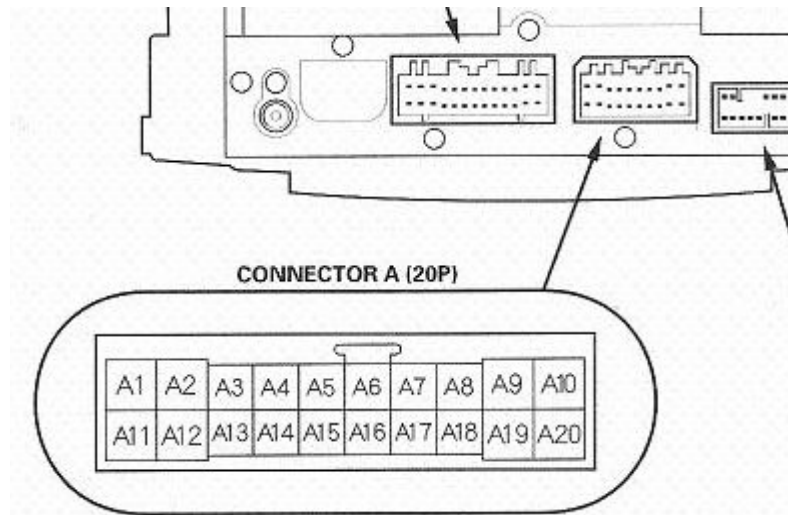
Two of the three new resistors. They are way too big, but it's what I had in the parts drawer!



Top of board with the 3<sup>rd</sup> resistor jammed in there.

The lead behind the radio appears on the factory harness. Unfortunately, most of the after market factory harness adapters leave off this pin. I moved a lead from another Honda harness I had (where it was one of the speaker leads) and installed it into the pin hole for lead #3. From there, I connected this wire to the tip (the very end point) of a 3 conductor stereo 1/8" plug. ALWAYS use a stereo plug for the remote connector.

## REFERENCES & OTHER INFO



Looking at this diagram of the Honda audio connector, I found the steering wheel audio control lead at connector A3. Remember this is going to be backwards for the connector in the vehicle. On the after market cable connector kit I have from Best Buy, this wire is not present and I had to add it.

Pioneer resistance values for remote control:

I got this information from:

<http://www.mp3car.com/vbulletin/input-devices/91373-pioneer-wired-remote-control.html>

as posted by "vic\_c" on mp3car.com forums:

*When I hooked this up to the tip of the remote connector jack on the Pioneer  
I found the following functions seemed to work:*

- 0  $\Omega$  Off (No apparent effect)*
- 2.2k  $\Omega$  Source (switch between CD and radio or OFF if > 2 seconds)*
- 4.4k  $\Omega$  Mute (toggles "ATT" on display with muted audio)*
- 6.6k  $\Omega$  List(Disp) (No apparent effect)*
- 8.8k  $\Omega$  Seek up (Search up-radio or next CD track - hold down to fast forward.)*
- 12.1k  $\Omega$  Seek down (Search down-radio or previous CD track)*
- 16.8k  $\Omega$  Volume up (Volume up)*
- 23.6k  $\Omega$  Volume down (Volume down)*
- 33.6k  $\Omega$  Select (No apparent effect)*
- 48.6k  $\Omega$  Mode (In radio mode switch between FM1,FM2 and MW.)*

Also shout outs to [www.avic411.com](http://www.avic411.com)

My homepage:

<http://users.757.org/~ethan>