Loopy DS Capture

Seems like Loopy started off with his "Jumbotron DS". Original Site with his build-log isn't up, though there are links to it in different places, and it's been archived on the Wayback Machine.

https://web.archive.org/web/20141229062546/http://home.comcast.net/~olimar/DS/jumbotron/

The photos on that page show a lot about the capture card. He was also able to achieve touchscreen control. I believe he did this by emulating the SPI interface of the touchscreen chip. The motherboard photos could use some more digging into to figure out how exactly he did it.

From what I can tell, the early versions of the DS Capture card were soldered to the touchpoints on the DS Motherboard, with later versions intercepting the signal, thus not requiring soldering.

He posted links about the datasheet for a very close match to the DS LCD screen (The screen Nintendo used was custom made by Sharp if I remember correctly).

https://www.digikey.com/product-detail/en/sharp-microelectronics/LQ030B7DD01/425-2479-ND/761006

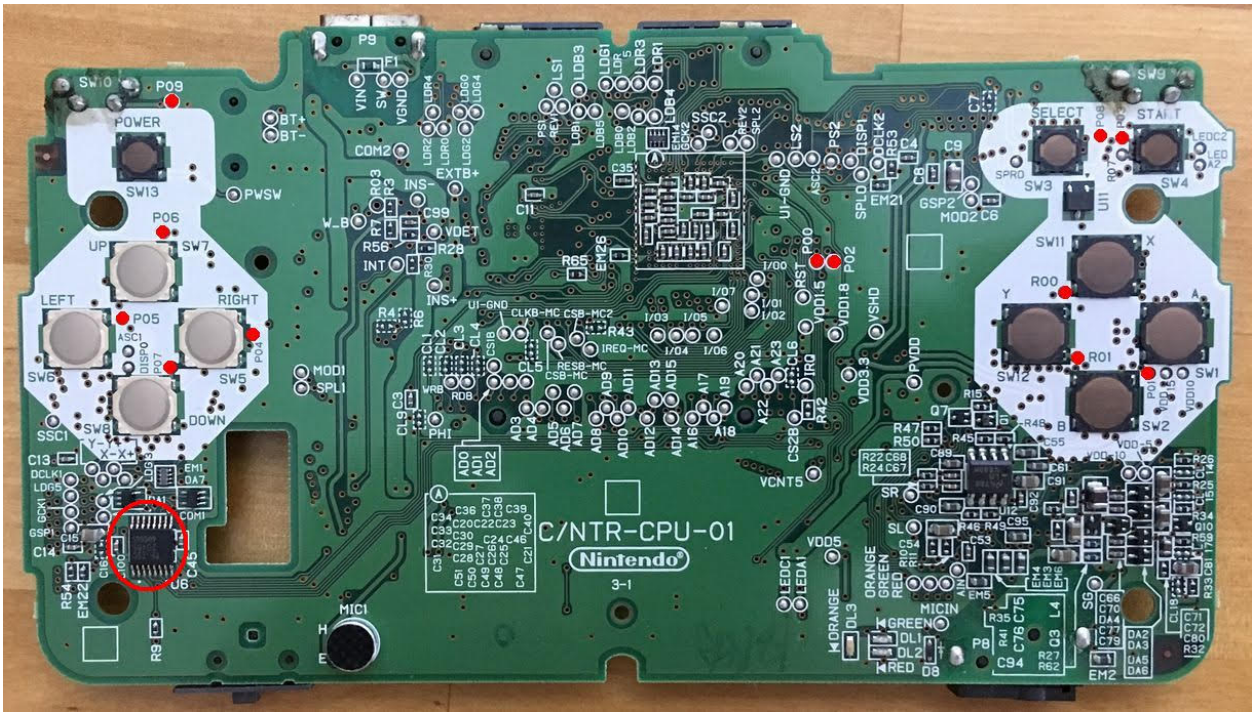
https://media.digikey.com/pdf/Data%20Sheets/Sharp%20PDFs/LQ030B7DD01.pdf

He also posted a link to the datasheet for the touchscreen. Seems like the Wii U gamepad also uses this controller.

https://www.ti.com/lit/ds/symlink/tsc2046.pdf?ts=1593475600740

https://www.ti.com/product/TSC2046

Loopy sent me this image showing the locations of the touchpoints of the DS buttons:



The touchpoints connect to ground whenever a button is pressed. For controlling the buttons with an Arduino, set a digital output to LOW whenever you want it to be pressed, set the mode to INPUT when you don't want the button to be pressed. Make

sure to connect the ground of the DS (can be found at BT- and many other places) to the ground of the Arduino.

For getting inputs using the button touchpoints, it should be high whenever the button isn't pressed, low when the button is pressed.