

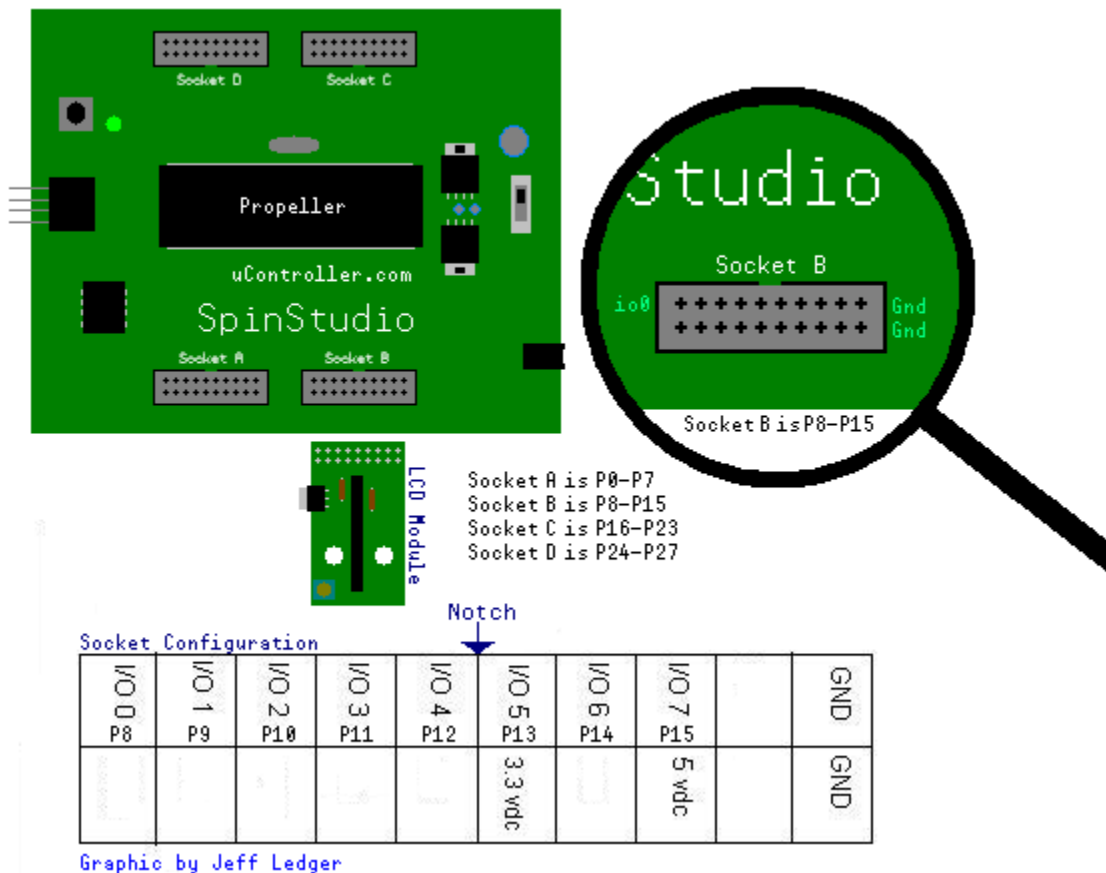
REINVENTING THE WHEEL: ADAPTING CARDS FROM SPINSTUDIO:

As mentioned earlier, Brian at uController.com has created a clever method of interfacing to the Propeller chip, called ‘SpinStudio’. His theory is that by creating the add-on cards as pluggable modules, nothing will be wasted when the next Propeller chip arrives. Simply plug the modules into a new board.

We have already looked at his adaptable SD card which fits both SpinStudio as well as the Protoboard pin configuration. This time we’ll take it a step further.

SpinStudio is broken into Sockets, A-D. Each socket has eight of the Propeller’s I/O pins, 3v and 5v, Ground, as well as access to few other nifty pins. As Protoboard owners, we’re interested in Socket B. By replicating Socket B, we have access to many of Brian’s other add-on cards: The Video/Audio board, the LCD module, the Servo module, and perhaps even an Ethernet module in the future.

Since a picture is worth a thousand words, so let’s take a closer look at Socket B.



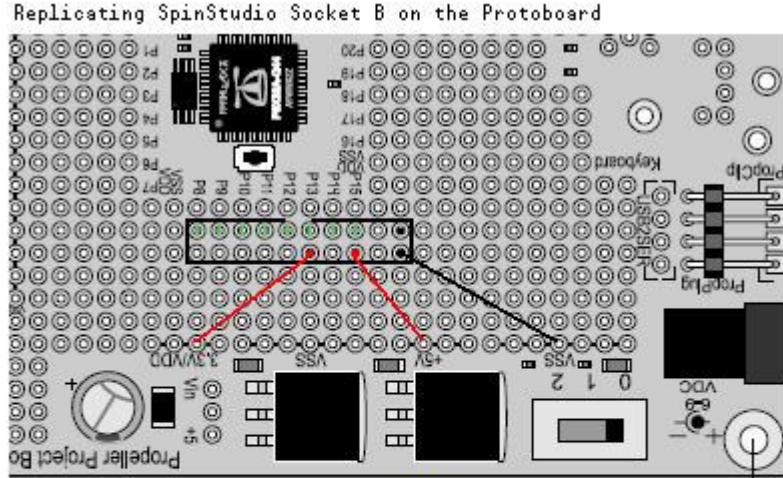
Note the ‘Notch’ under the words ‘Socket B’ on the SpinStudio board. Thanks Brian!

ADAPTING CARDS FROM SPINSTUDIO: CONTINUED...

At first glance, replicating Socket B appears to be a lot of work, but let's compare Brian's layout with the actual Protoboard configuration.

The Protoboard duplicates its I/O pins, so we can leave space for a female pin header next to the cpu.

Notice all the I/O fall out just perfectly? You'll need to connect the 5v, 3v, and Gnd. Use a double row 20pin male pin header.



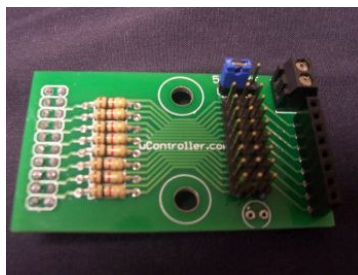
I've left out connections for SCL/SDA connections for now. We'll revisit some enhancements to this socket (add a few lines later.)

Socket Configuration								
I/O 0 P8	I/O 1 P9	I/O 2 P10	I/O 3 P11	I/O 4 P12	I/O 5 P13	I/O 6 P14	I/O 7 P15	GND
					3.3 vdc		5 vdc	GND

So what did this get us? Look at these beauties you can get from uController.com that now work on your Protoboard! At \$11.99 a piece, your Protoboard will be top notch.



*Two channel audio/video*



*Servo/IO board*



*LCD Module*

These kits require assembly, but are perfect mini-projects for beginners.

*(Special Note: The LCD Module will require an extra female pin header to be inserted between the Protoboard and the module to raise the LCD above the height of the Parallax VGA/PS2 Accessories kit. See uController.com for details.)*

“I THINK I'M A CLONE NOW” - TURN PROTOBOARD INTO SPINSTUDIO:

At this point we've replicated SpinStudio socket B. Let's take it one step further and see what would happen if we include the other three sockets on an empty Protoboard.

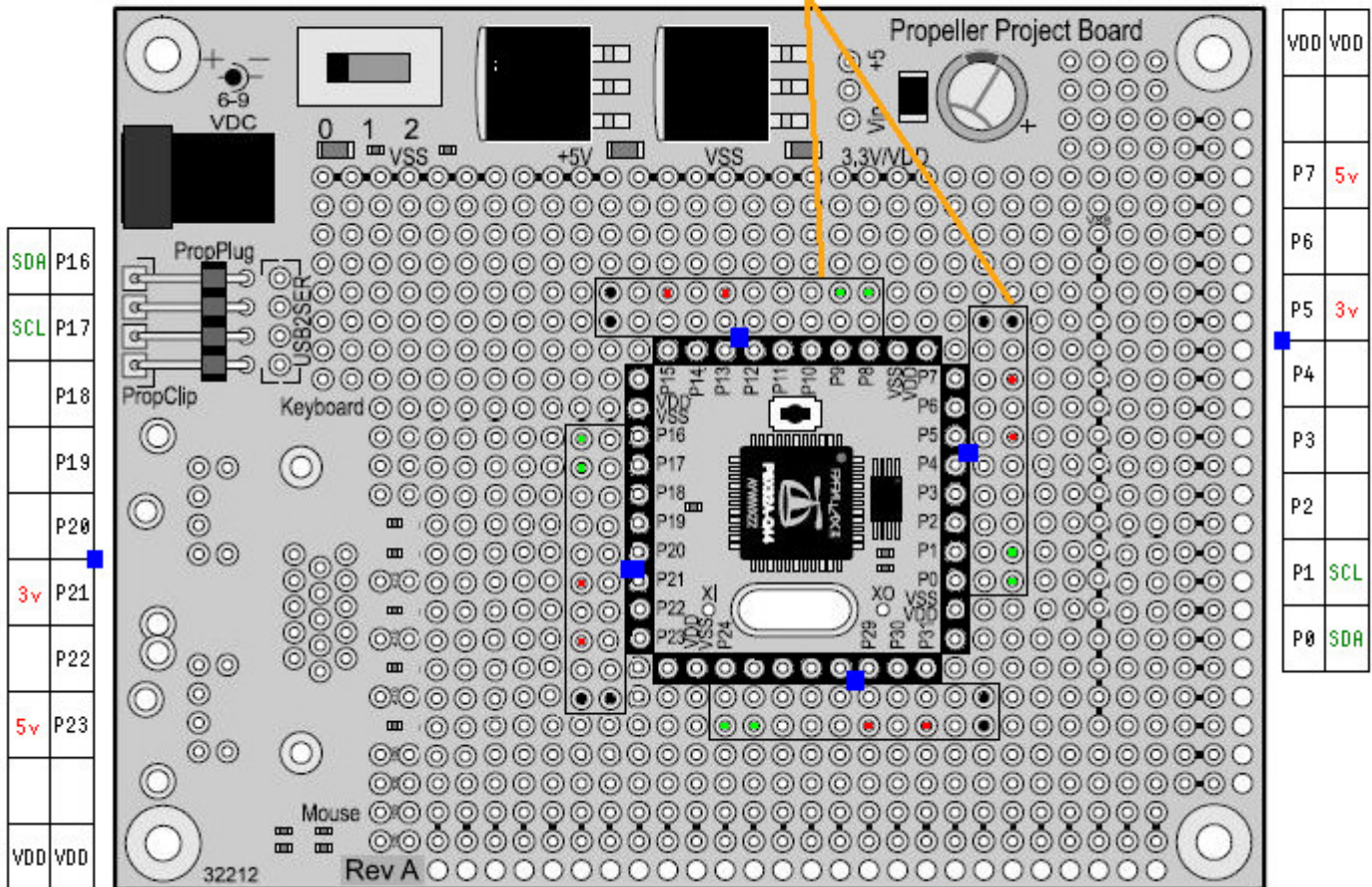
The next illustration includes both female pin headers next to the Propeller chip, as well as SpinStudio sockets A-D. All I/O pins line up perfectly, requiring only Vss/Vdd connections to be soldered. SCL & SDA pins are optional depending on which SpinStudio cards you are intending to use.

Propeller Protoboard to SpinStudio Conversion by Jeff Ledger

VDD		5v		3v				SCL	SDA
VDD		P15	P14	P13	P12	P11	P10	P9	P8



Male pin headers are recommended as they will leave room for a female header next to the Propeller.



SDA	P16
SCL	P17
	P18
	P19
	P20
3v	P21
	P22
5v	P23
VDD	VDD

VDD	VDD
P7	5v
P6	
P5	3v
P4	
P3	
P2	
P1	SCL
P0	SDA

KEY

- = Notch
- SDA = P29
- SCL = P28

Image above shows placement of both male pin headers and female headers next to the cpu.

SDA/SCL may be optional depending on what SpinStudio cards you are planning to use.

P24	P25	P26	P27	P28	P29	P30	P31		VDD
SDA	SCL				3v		5v		VDD

In this configuration, all I/O pins line up correctly, requiring only Vdd & Vss

Note: You may want to skip the “Accessories Kit” from Parallax with this design.