

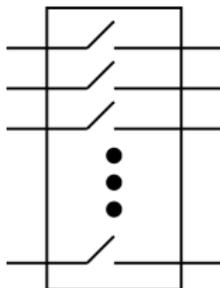
Electronics DIP Switches

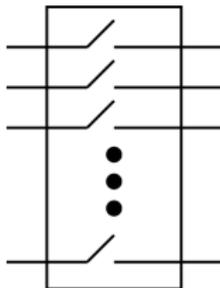
Terry Sturtevant

Wilfrid Laurier University

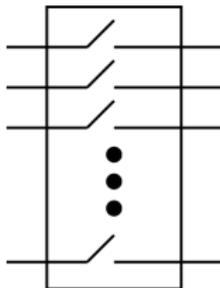
April 1, 2013

DIP switches

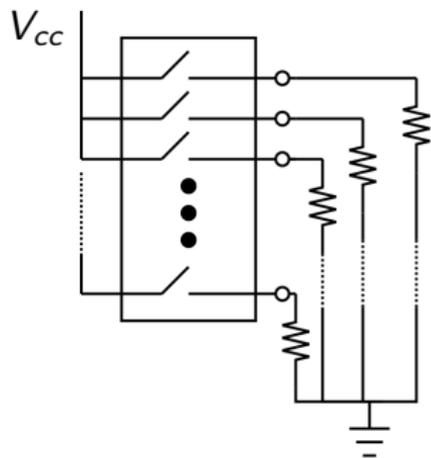


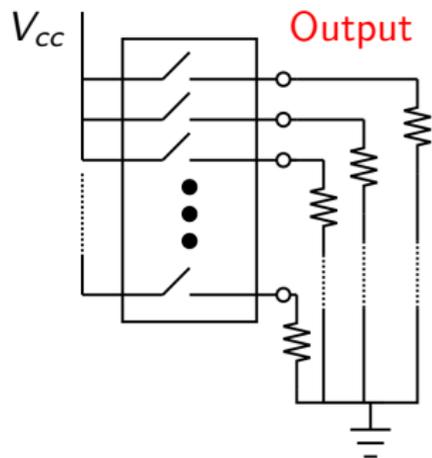


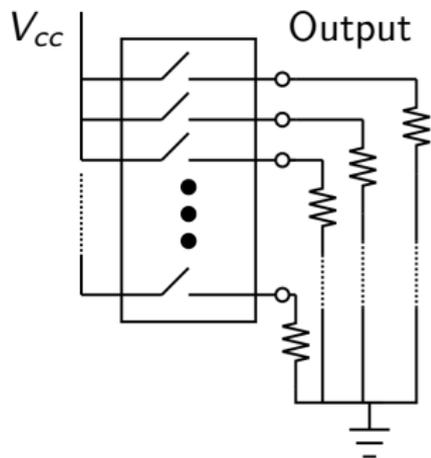
- DIP stands for **D**ual **I**ncline **P**ackage.



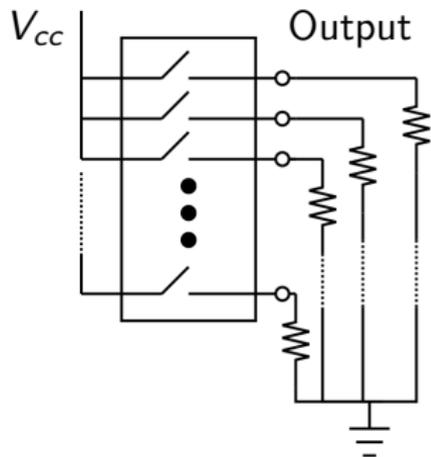
- DIP stands for **D**ual **I**ncline **P**ackage.
- Each switch is either connected or not.







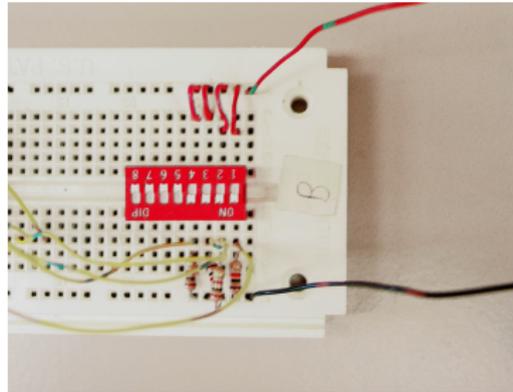
- In order to make the outputs **HIGH** or **LOW**, pull-up or pull-down resistors must be added.



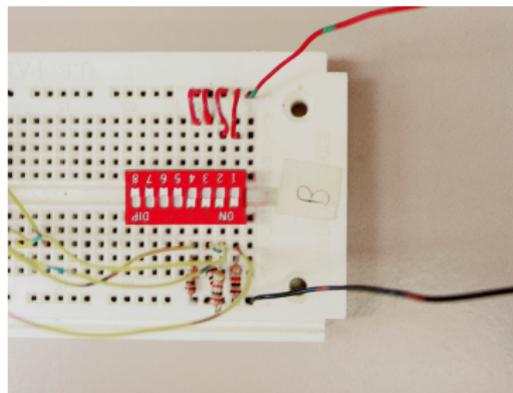
- In order to make the outputs **HIGH** or **LOW**, pull-up or pull-down resistors must be added.
- The output is taken *where the resistor and switch meet*.

Here is a DIP switch.

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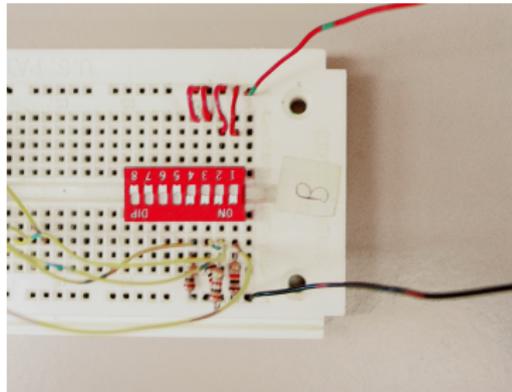


Here is a DIP switch.



It is set up for *active high* operation.

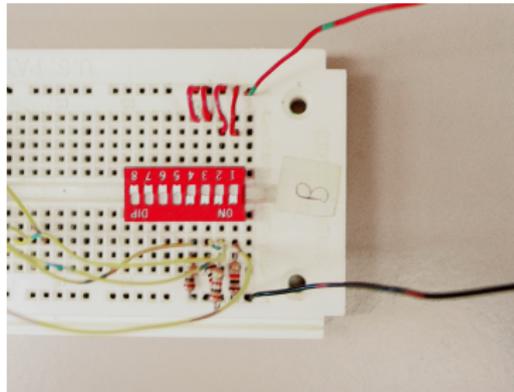
Here is a DIP switch.



It is set up for *active high* operation.

Note that the signals come from the *same side* of the switches as the resistors.

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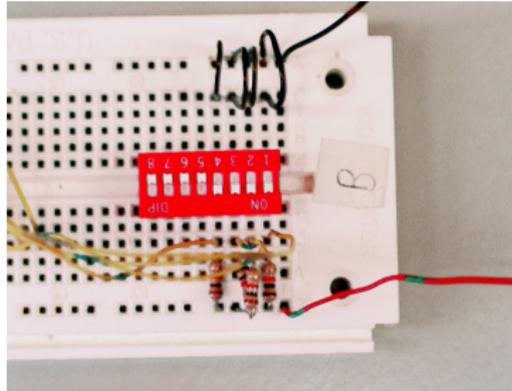
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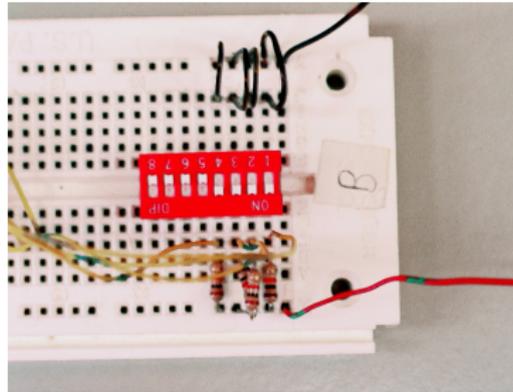
(Only four switches are connected to avoid clutter.)

Here's the same DIP switch.

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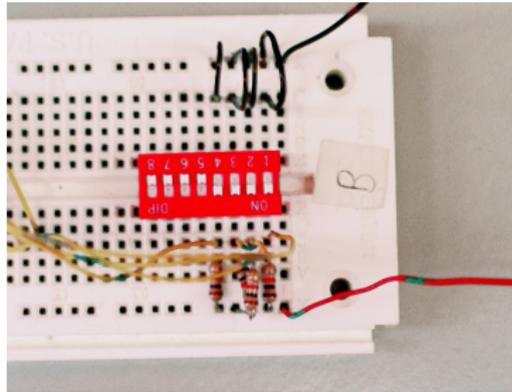


Here's the same DIP switch.



It is set up for *active low* operation.

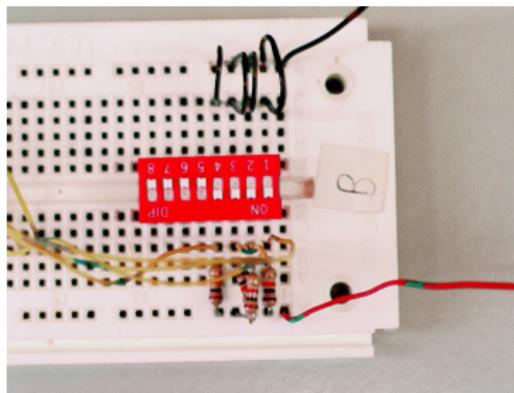
Here's the same DIP switch.



It is set up for *active low* operation.

Note that the signals come from the *same side* of the switches as the resistors.

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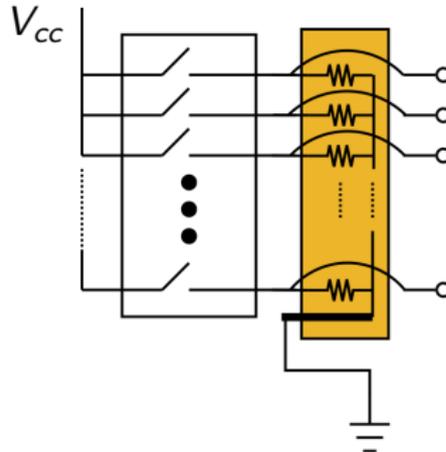
It is set up for *active low* operation.

Note that the signals come from the *same side* of the switches as the resistors.

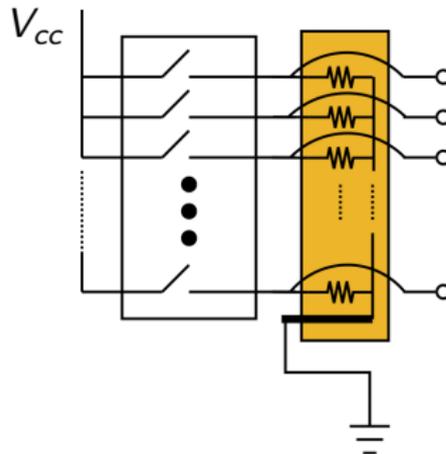
(Only four switches are connected to avoid clutter.)

Using a resistor array simplifies the connections.

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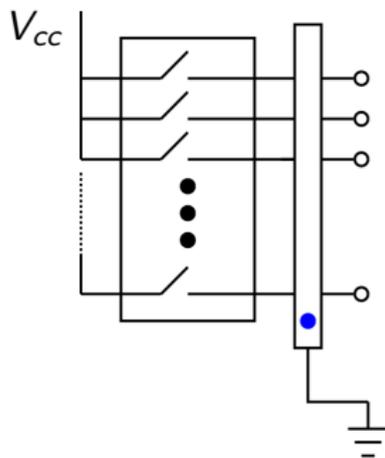
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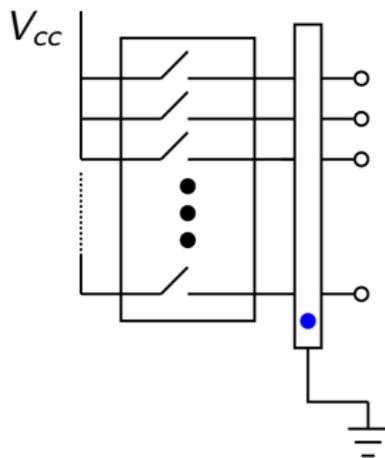
This is for active *high* operation.

Here's a view closer to what it looks like.

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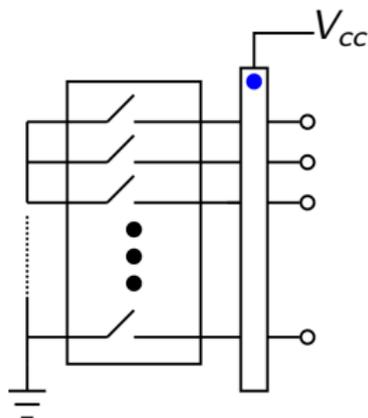
Here's a view closer to what it looks like.



This is for active *high* operation.

For active low operation, reverse the connections to V_{CC} and ground.

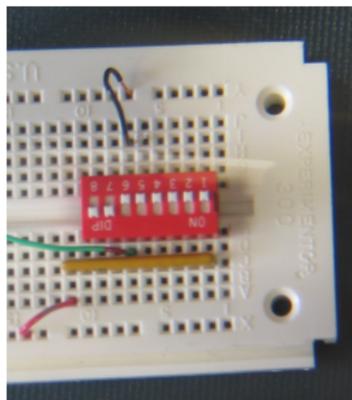
For active low operation, reverse the connections to V_{CC} and ground.



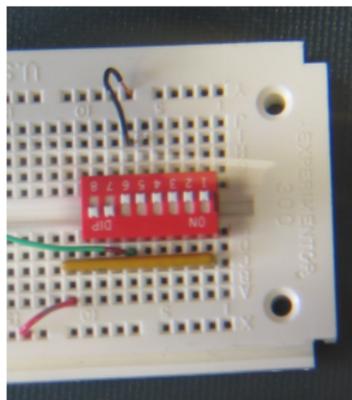
Here is a DIP switch.

Here is a DIP switch. (Only a single switch is connected.)

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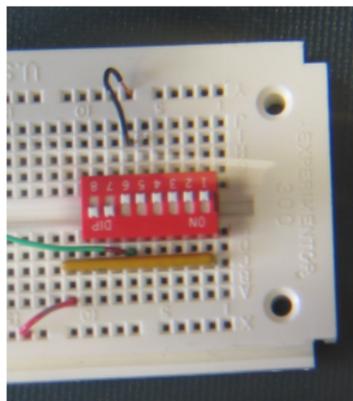


Here is a DIP switch. (Only a single switch is connected.)



It is set up for *active low* operation.

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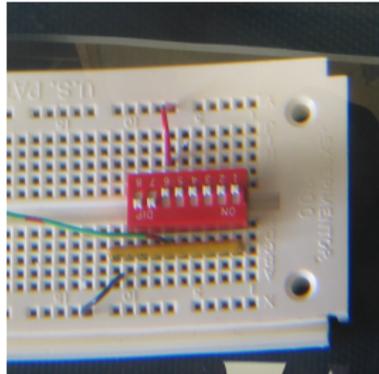
It is set up for *active low* operation.

(The common pin of the resistor array is *high*.)

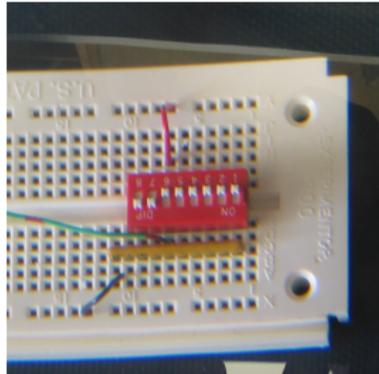
Here is the DIP switch in a different configuration.

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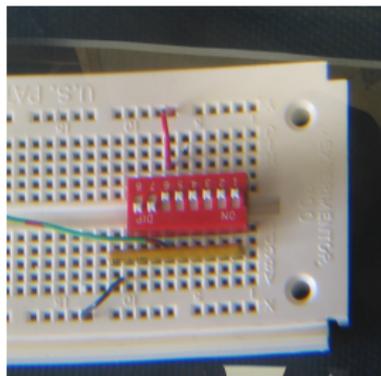


Here is the DIP switch in a different configuration. (Again only a single switch is connected.)



It is set up for *active high* operation.

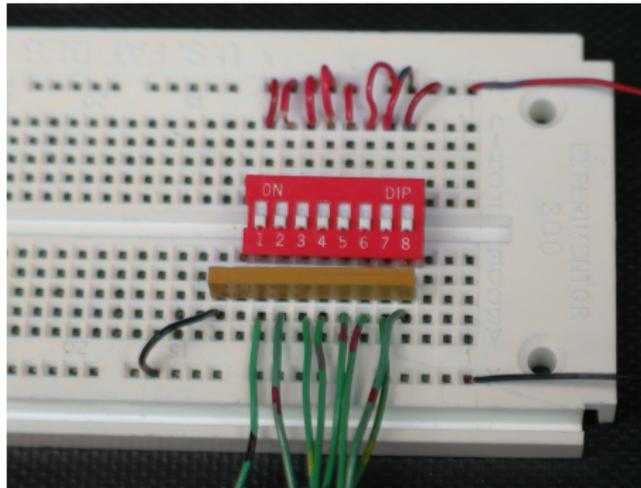
Here is the DIP switch in a different configuration. (Again only a single switch is connected.)



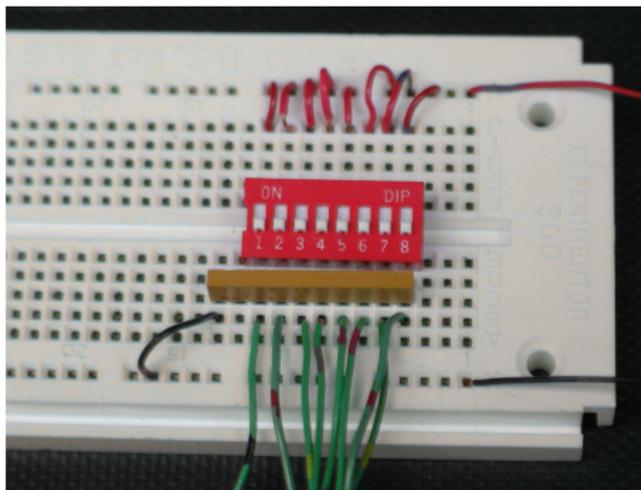
It is set up for *active high* operation.
(The common pin of the resistor array is *low*.)

Here is the DIP switch in active high configuration with *all* of the switches connected.

Here is the DIP switch in active high configuration with *all* of the switches connected.

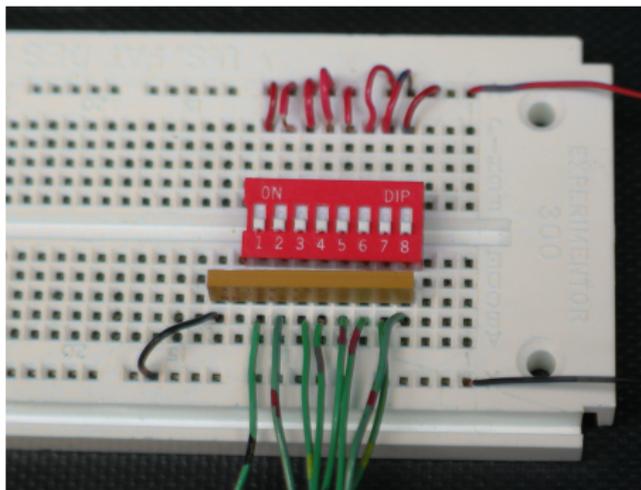


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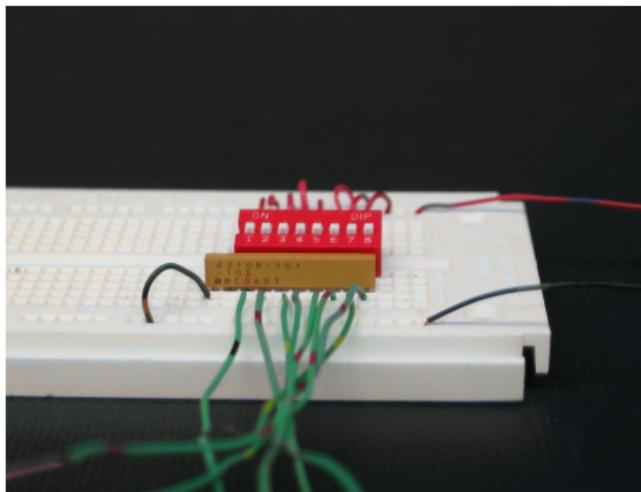
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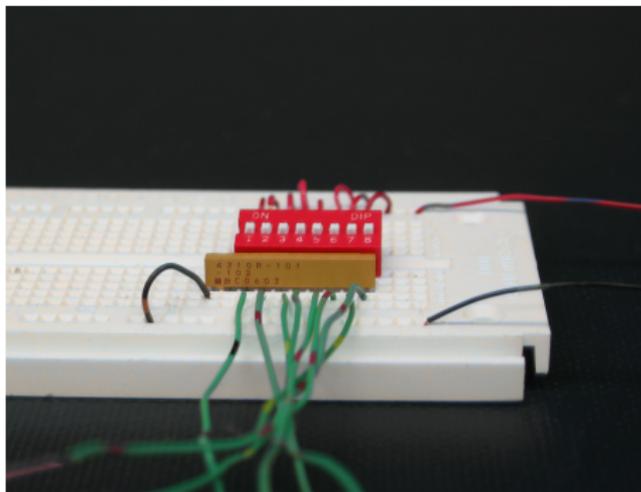
It is set up for *active high* operation.
(The common pin of the resistor array is *low*.)

Here's a side view.

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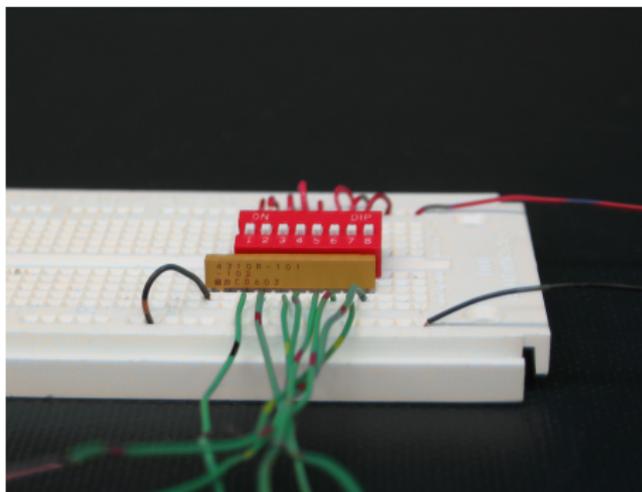


Here's a side view.



The common pin of the resistor array is on the left.

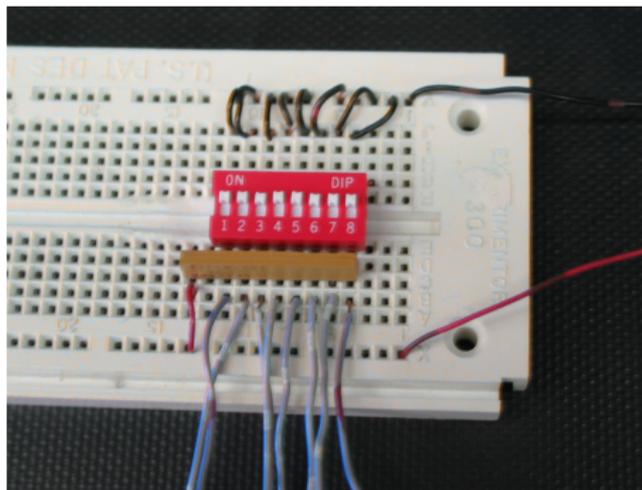
Here's a side view.



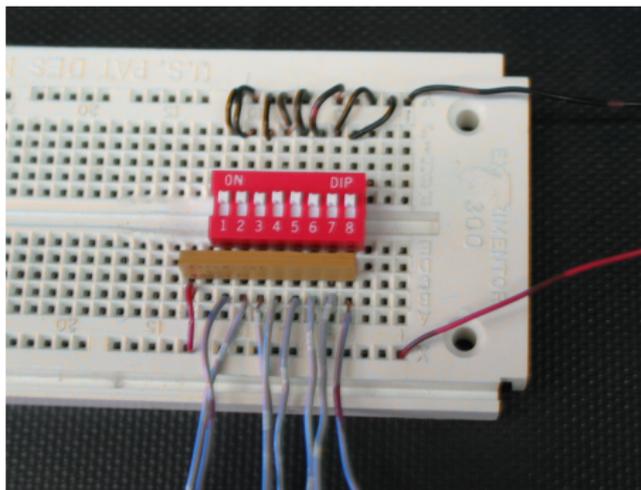
The common pin of the resistor array is on the left.
(Note that it is past the end of the DIP switch, so it doesn't line up with any switch.)

Here is the DIP switch in active low configuration with *all* of the switches connected.

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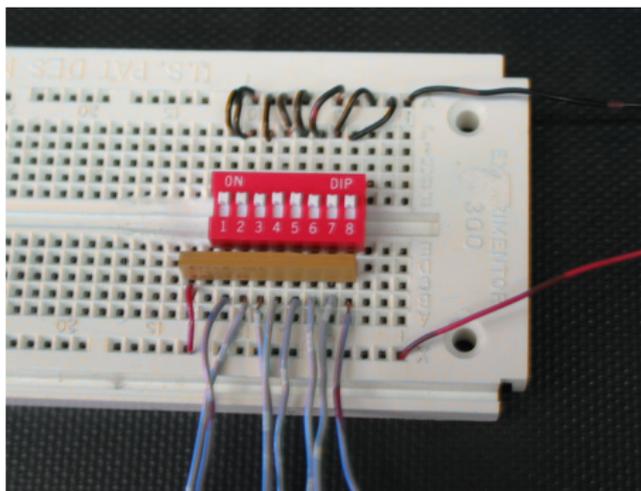


Here is the DIP switch in active low configuration with *all* of the switches connected.



It is set up for *active low* operation.

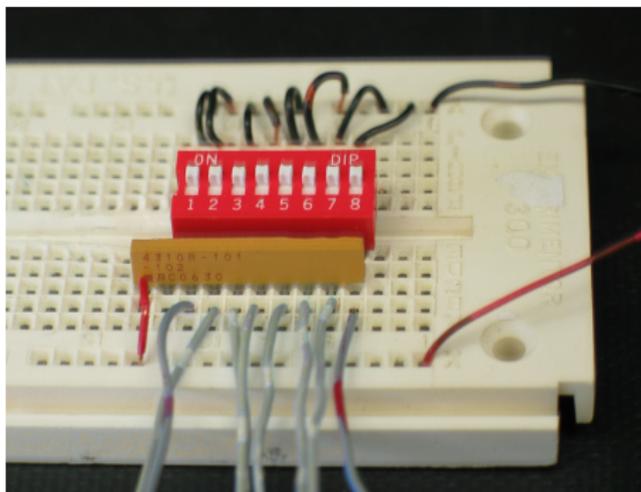
Here is the DIP switch in active low configuration with *all* of the switches connected.



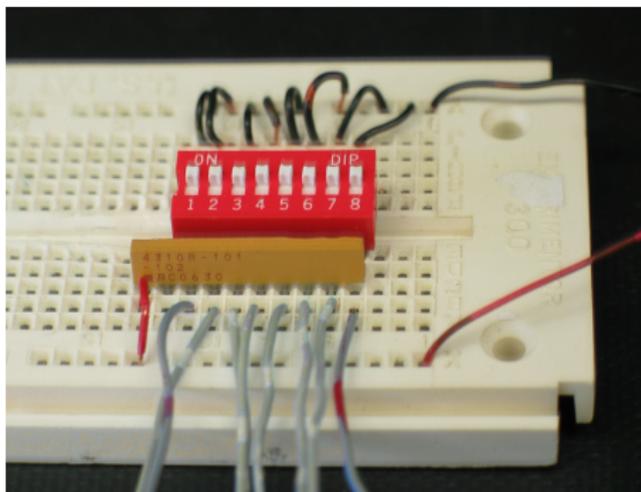
It is set up for *active low* operation.
(The common pin of the resistor array is *high*.)

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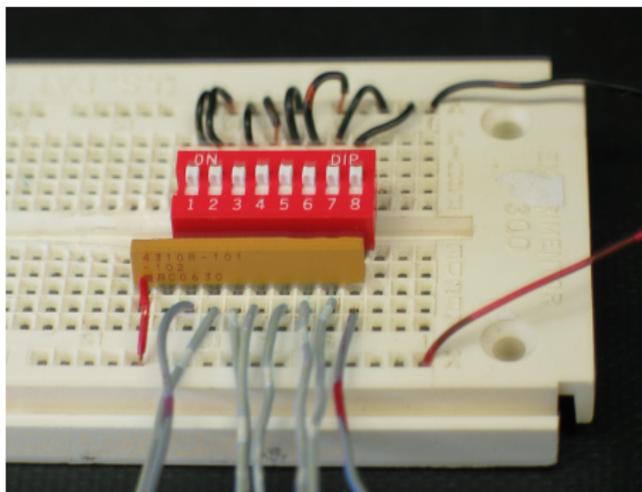


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