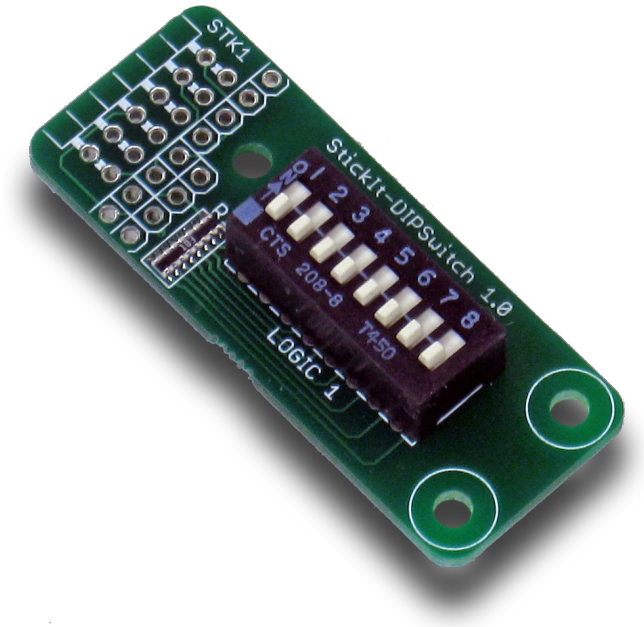
StickIt! DIP Switch Manual

How to install and use your new StickIt! DIP Switch Module



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StickIt! DIP Switch Manual
MAN008 (V1.0) September 27, 2013

The following table shows the revision history for this document.

Date	Version	Revision
09/27/13	1.0	Initial release for StickIt! DIP Switch module V1.0.

Table of Contents

C.1 Preliminaries

Here's some helpful information before getting started.

Getting Help!

Here are some places to get help if you encounter problems:

- If you can't get the StickIt! DIP Switch module to work, send an e-mail message describing your problem to help@xess.com or submit a problem report at http://www.xess.com/help.php.
- Our web site also has
  - answers to frequently-asked-questions,
  - example designs, application notes and tutorials,
  - a forum where you can post questions.

Take Notice!

It's pretty hard to get in trouble with this module.

Packing List

Here is what you should have received in your package:

- a StickIt! DIP Switch module.
- PMOD™ male header.
- Wing male headers (8-pin & 4-pin).

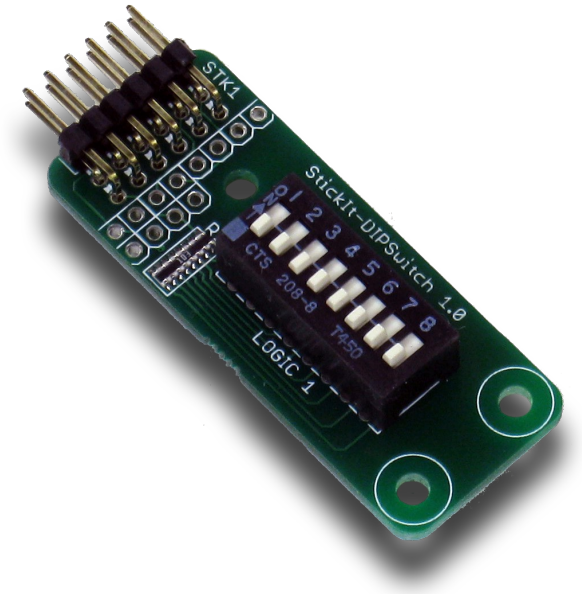
C.2 Setup

The StickIt! DIP Switch module provides an eight-position DIP switch that connects to an eight-bit PMOD or a Wing socket on your StickIt! board.

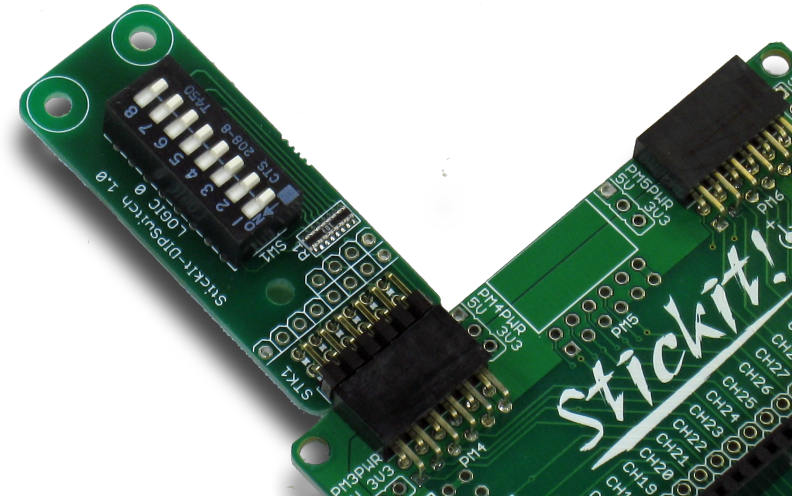
Inserting Your StickIt! DIP Switch Module Into Your StickIt! Board

Inserting Into a PMOD Socket

To use the StickIt! DIP Switch module with a PMOD socket, first solder the included male PMOD header to the module as shown. (**To insure a stable connection, only use a header with 0.025" square pins.**)

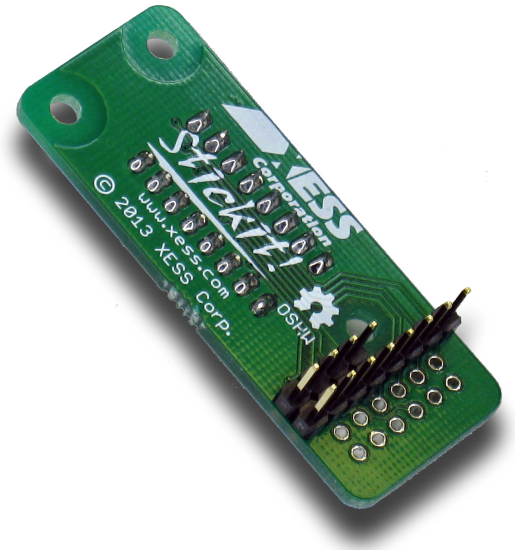


Then insert the module into one of the PMOD sockets on the StickIt! Board.

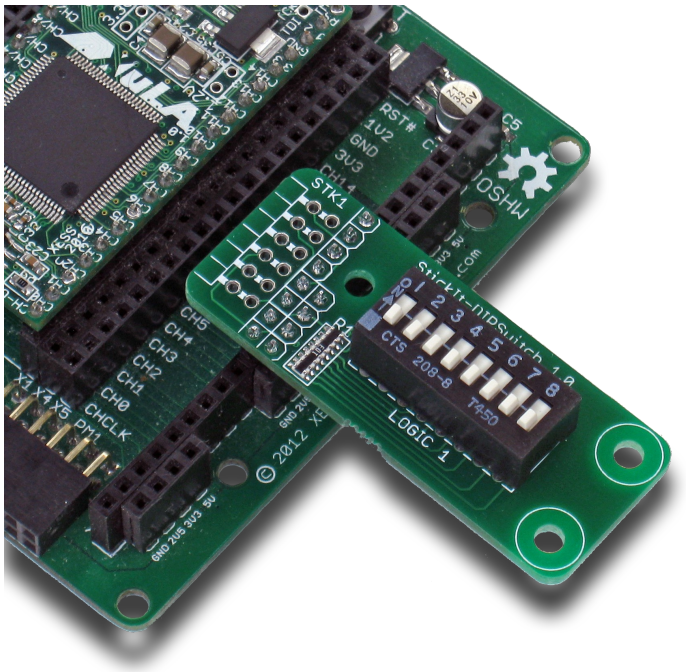


Inserting Into a Wing Socket

To use the StickIt! DIP Switch module with a Wing socket, first solder the included male Wing headers to the module as shown. (**To insure a stable connection, only use a header with 0.025" square pins.**)



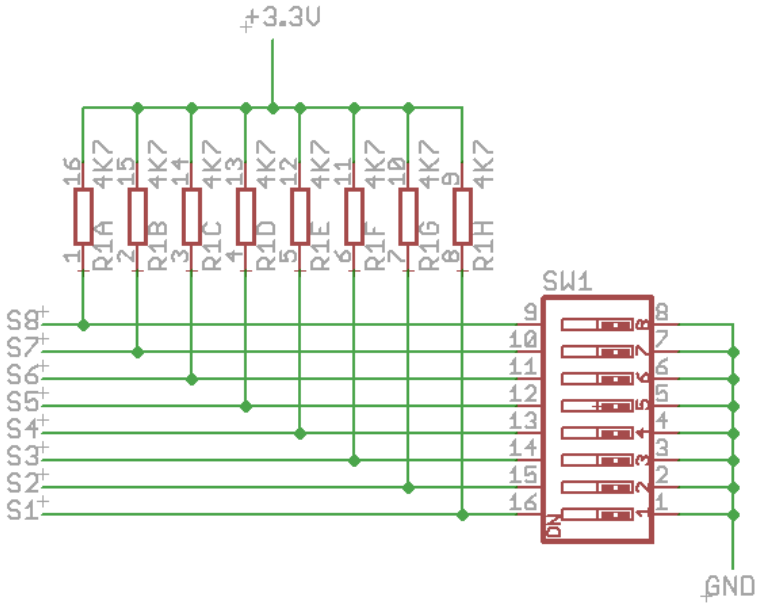
Then insert the module into one of the eight-bit Wing sockets on the StickIt! board.



C.3 Operation

This chapter describes the operation of the StickIt! DIP Switch module using a simplified schematic. You can find a complete schematic at the end of this manual.

The StickIt! DIP Switch module has eight identical circuits, each consisting of a SPST switch and a pull-up resistor. When a switch is ON (i.e. closed), it pulls the connected StickIt! module I/O pin to ground, thus applying a logic 0. When a switch is OFF (i.e. open), the pull-up resistor pulls the associated I/O pin to +3.3V, thus applying a logic 1.



C.4 Using the Module

To use the StickIt! DIP Switch module, you will need to do the following:

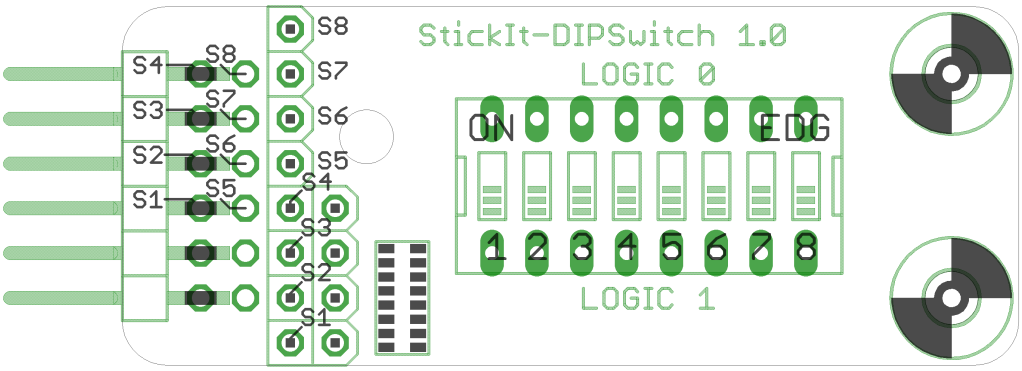
- Create a Xilinx ISE FPGA project and allocate up to eight input ports to accept the signals from the module.
- Attach the module to either a PMOD or Wing socket on the StickIt! board.
- Determine the channel signals on the PMOD or Wing socket that connect to each I/O pin of the module.
- Find which FPGA pin of the XuLA board connects to each channel signal. (You can find this information in the StickIt! Board manual.)
- Make a UCF file associating each FPGA pin with an I/O pin of the module.
- Include the UCF file in your ISE project.

That's a lot of work just to read some switches, so we've done most of it for you. Just go to http://github.com/xesscorp/StickIt. There, you will find a subdirectory with a Xilinx ISE project that includes:

- an example that reads the DIP switch settings and sends them back to the PC through the USB link,
- a UCF file containing the FPGA pin assignments to use when installing the StickIt! DIP Switch module into any of the PMOD or Wing sockets.
- and a Python file that queries the switch settings and displays them on the PC.

A.1 I/O Locations

The connections of the PMOD and Wing header I/O signals to the switches (S1 through S8) of the StickIt! DIP Switch module are shown below.



A.2 Schematic