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How To Wire Up Toggle Switches to an Input Module

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Show Me ...

...How To Wire Up Toggle Switches to an Input Module

Summary

This tutorial will show you how to wire up simple toggle switches to a SIM-board USB Input Module, and then show you how to test the switch in the SIM-board Universal Controller, and how to assign an action to the switch in the software to control the landing gear in Flight Simulator 2004.

You will need...

- a [SIM-board USB Master Module](#)
- a [SIM-board USB Input Module](#) (any type)
- 2 [USB cables](#)
- a toggle switch or similar
- wire
- [crimping tool](#), some [crimps](#) and [crimp houses](#)
- wire strippers
- soldering iron
- latest version of the [SIM-board Universal Control software](#)
- a registered version of FSUIPC

This "Show Me How..." tutorial is provided in addition to the [SIM-board USB Help Documentation](#). It is recommended you refer to both this tutorial and the Help Documentation for your modules.



Step 1: Connect your Toggle Switch

Connect one terminal of the switch to the top pin of pin pair "1" on the "BANK A" area.

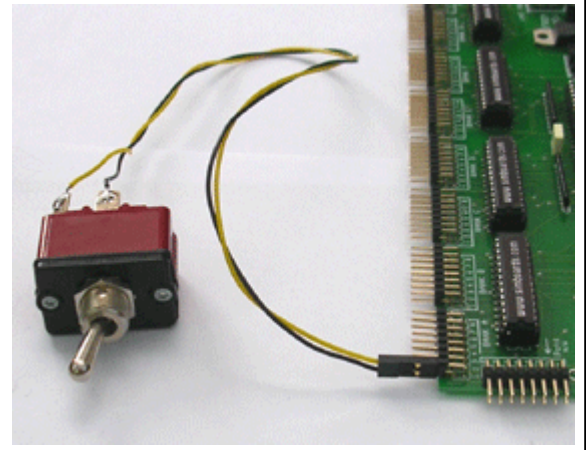
Connect the other terminal of the switch to the bottom pin.

(The picture on the right shows a toggle switch connected to the module using a wires that have been crimped onto metal crimps, and then inserted into a 2-way plastic housing. This makes for an easy individual connection straight onto the switch

pins of the module.)

Repeat this procedure for as many switches as you need, working left to right across the top pins of the module, from "BANK A" to "BANK H". These 8 banks along the top side of the module will allow for up to 64 switch connections (assuming the module you purchased allows for this number of switches).

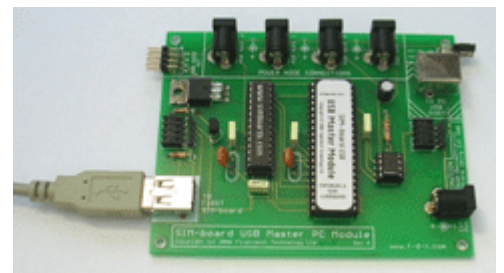
Similarly, the banks labelled "BANK S" through to "BANK Z" located along the bottom edge of the module can also be used to fit switches 65 to 128.



Step 2: Connect the Master Module and Input Module together

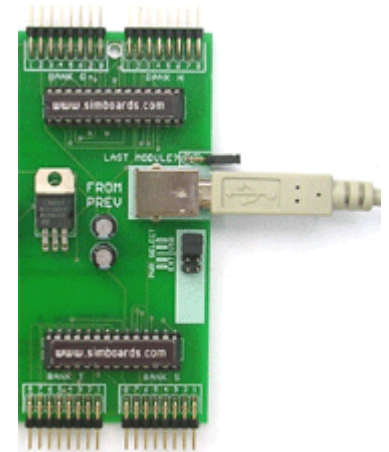
Now that we have made our switch connections, we can connect our SIM-boards together.

Using a USB cable (A-male to B-male), connect the A-male end of the cable (flat end) to the USB socket marked "TO FIRST SIM-BOARD" on the SIM-board USB Master Module.



Step 3: Connect the Master Module and Input Module together (part 2)

Connect the other end (the B-male or box end) to the USB socket marked "FROM PREV" on the SIM-board USB Input Module.



Step 4: Connect the Master Module to your PC

Using a second USB cable, connect the B-male (box) end of the cable to the USB socket marked "TO PC USB PORT" on the SIM-board USB Master Module.

Finally, connect the other end of the cable to a free USB socket on your PC.



Step 5: Install the SIM-board USB drivers

(If you have already installed the Windows driver file for SIM-boards USB, skip this step and go straight to Step 6).

If this is the first time that your SIM-boards have been connected to this USB port on your computer, Windows will attempt to identify the hardware item. A few seconds after you connect the Master Module to your PC, Windows will pop up a "Found New Hardware" dialog box.

You should follow the instructions detailed in the "[How To Install the SIM-board USB Windows Driver file](#)" tutorial, which you can access here (it will pop up in a new browser window).

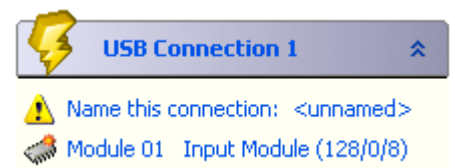


Step 6: Load the SIM-board Universal Controller software

Now load the SIM-board Universal Controller application in the normal way.

A few seconds after loading, a new "USB Connection" will be listed in the left hand side of the window, and the Input Module will be listed as "Module 01".

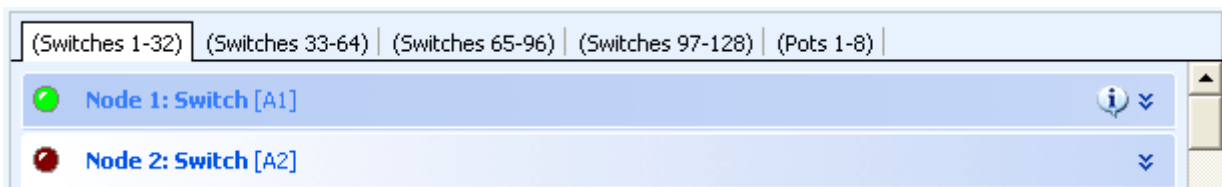
Click on the "Module 01" Input Module entry in the list to display this module's nodes for configuration.



Step 7: Test the Switch

To test the switch, flick the switch back and forth and as you do so, the round circular disc next to "Node 1" will change from red (switch off) to green (switch on).

If this test performs correctly, you have successfully wired up your switch to the associated node.



Step 8: Assign a Flight Simulator function

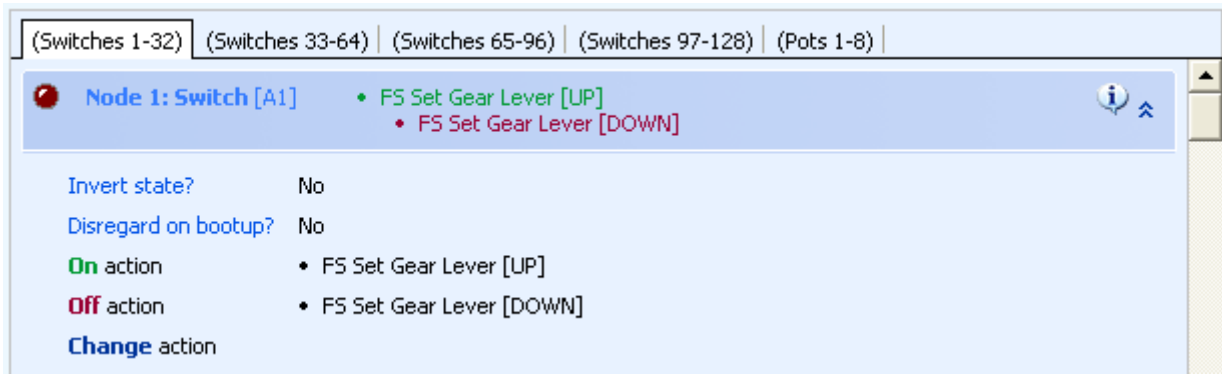
Having verified that the switch is operating correctly in test mode, you can now assign a function to have it control functions within flight simulator.

For this example, we will use the switch to control the raising and lowering of the landing gear of the default B737 aircraft.

Click on Node 1 to expand the node and reveal its configuration settings. Then click on "On action" and from the list that pops up, select "FS Gear Lever [UP]" from the "FS : Gear" subsection. This action will command the switch to raise the landing gear lever when the switch is detected as being electrically "on". Click "Select" to assign this action to this node.

Now click on the "Off action" parameter, and select "FS Gear Lever [DOWN]" from the "FS : Gear" subsection. This action will command the switch to lower the landing gear when the switch is put in the "off" position. Click "Select" to assign this action to this node.

(Note: you can use the "Invert state?" parameter to swap the detection of "on" and "off" states of the switch. If you want the toggle switch to be "on" when in fact it is detected as "off" (or vice versa), set the "Invert state?" parameter to "Yes". Another option is to leave this set to "No" but swap the upper and lower pin connections for this switch.)



Step 9: Load Flight Simulator

Load Flight Simulator on your PC, or if you are using WideFS over a network, ensure you have Flight Simulator and the appropriate applications of WideFS running and connected properly.



Once loaded, select the default Boeing 737 aircraft model as the active aircraft.



Step 10: Run your test project

From the left hand side of the SIM-board Universal Controller window, select the "Run Project" option. Your simple project will begin to run, meaning that it is now active. Any changes you make to the switch position will command the raising and lowering of the gear. If there is a problem with the project, or an error occurs, the details will be shown in the message area at the bottom of the window.



- [General Options](#)
- [Library Configuration](#)
- [Brightness Settings](#)
- [Run Project](#)

To test your project, minimize the SIM-board Universal Controller window and flick your switch between the on and off positions. As you do so, you should see the landing gear lever in the B737 panel in Flight Simulator raise and lower.

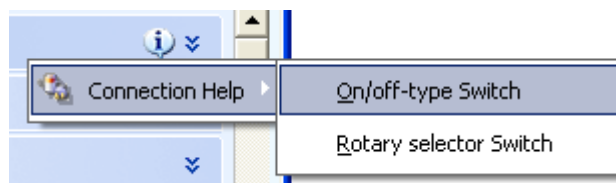
Congratulations! You have now made your first project using switches with a SIM-board USB Input Module.

To stop your project, click on "Stop Project".



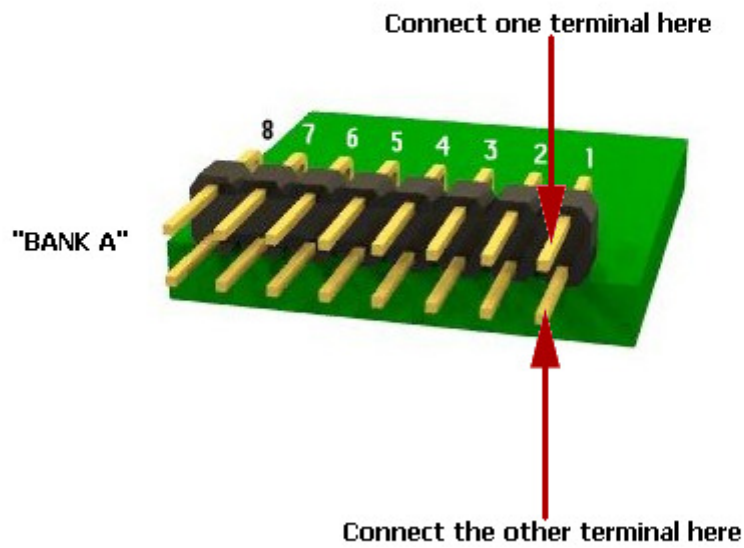
Step 11: Use the Floating Help Icon

You will notice that as you move your mouse over the nodes, a "floating help" icon appears which when clicked, offers you in-program help with connecting your devices. Help is provided for each node type for each module available in the SIM-board USB series, and will offer you further Step-by-Step instructions on how to wire the given node that you have clicked on.





On/off Switch Connection for Node 1



Close Connection Help Window

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