SIM-boards
by Flightdeck Technology Ltd
www.flightdecktechnology.com

Handy Connection Guide

All Modules General Usage

Choosing the Modules you need

Input Modules are capable of interfacing with switches, rotary encoders and potentiometers. Modules are sold based on the number of each type of input device they can control.

Output Modules are capable of driving many different types of LEDs, 7-segment displays, relays, solenoids, lamps, motors and most other types of device which require to be turned on or off. Modules are sold either as multiplexed output capable, direct drive capable, or 7-segment display capable.

- Multiplexed output nodes are best suited to driving many devices of the same type, typically LEDs. Only one resistor is required to drive each block of 8 LEDs, and with some LED types it is possible to remove the requirement for resistors altogether. Another advantage is the reduced power consumption of the devices, as each device is switched on and off very fast, timeslicing such that only one node in every 8 is ever on at one time.
- Direct Drive output nodes are best suited to driving devices which require a constant and uninterrupted current supply, such as relays, solenoids, and small motors. Each direct drive node is switched on and off independently of the other nodes.
- 7-segment display output nodes provide control of 7-segment display digits of either common-cathode or common-anode variety.

Match Your Hardware Against Function Modules

For this hardware type...	...use this module:
Switches, buttons, toggle switches, rotary selector switches, photo-interrupters	Input Module
Mechanical rotary encoders, optical rotary encoders	Input Module
Linear potentiometers, rotary potentiometers	Input Module
3mm, 5mm, and other common LEDs	Output Module, multiplexed
Small lamps	Output Module, multiplexed or direct drive
7-segment display digits	Output Module, digit mode
Relays, solenoids, small DC motors	Output Module, direct drive

Connecting your SIM-boards

In order to work with SIM-boards, you need one SIM-board USB Master Module, and one or more SIM-board Function Modules.

The SIM-board Master Module connects directly to a spare USB port on your PC. This module provides the link between your PC and all the Function Modules you choose to use. It does not provide any input/output function.

Your first Function Module is then connected to the other end of the Master Module, and subsequent Function Modules are connected to each other to form a chain of modules as you require (subject to a maximum of 100 modules per chain and maximum chain length of 50m/160ft).

When the Master Module is connected to your PC, and the SIM-board Universal Controller application is started, all boards on the chain will be detected automatically and shown for use in the software. Note that the modules show up in random order, not necessarily in the order that they appear on the physical chain. You should cross-reference the serial number printed on each module with the serial number shown in the software (shown when you click on the module to access its nodes) and make use of the "name this module" feature to ensure you are aware of which physical board each software board is referring to.

More than one chain of modules can be established per PC if required, by connecting further Master Modules to other USB ports on your PC, and connecting further Function Modules to them in turn.