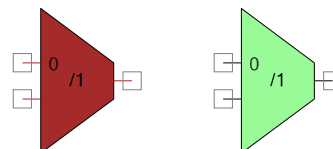


# Virtual Mux

## 1.0

## Features

- Selects 1 of up to 16 inputs
- Selection is static
- Configurable number of inputs



## General Description

Virtual mux components are similar to conventional muxes in that they connect a selected input to an output. For a conventional mux, the input selection can be dynamically controlled by a control signal. For a virtual mux, the input selection is determined by an expression that evaluates to a constant when used within a design. The purpose of the virtual mux is to pick one input at build time.

There are two separate virtual mux components: one analog and one digital.

## When to Use a Virtual Mux

A virtual mux is commonly used as an internal to a schematic-based component. For example, it can be used by PSoC Creator to select the clock from a set of clock sources.

## Input/Output Connections

The virtual mux has a number of inputs and a single output. The inputs and the outputs all share the same signal width.

### in\_k – Input

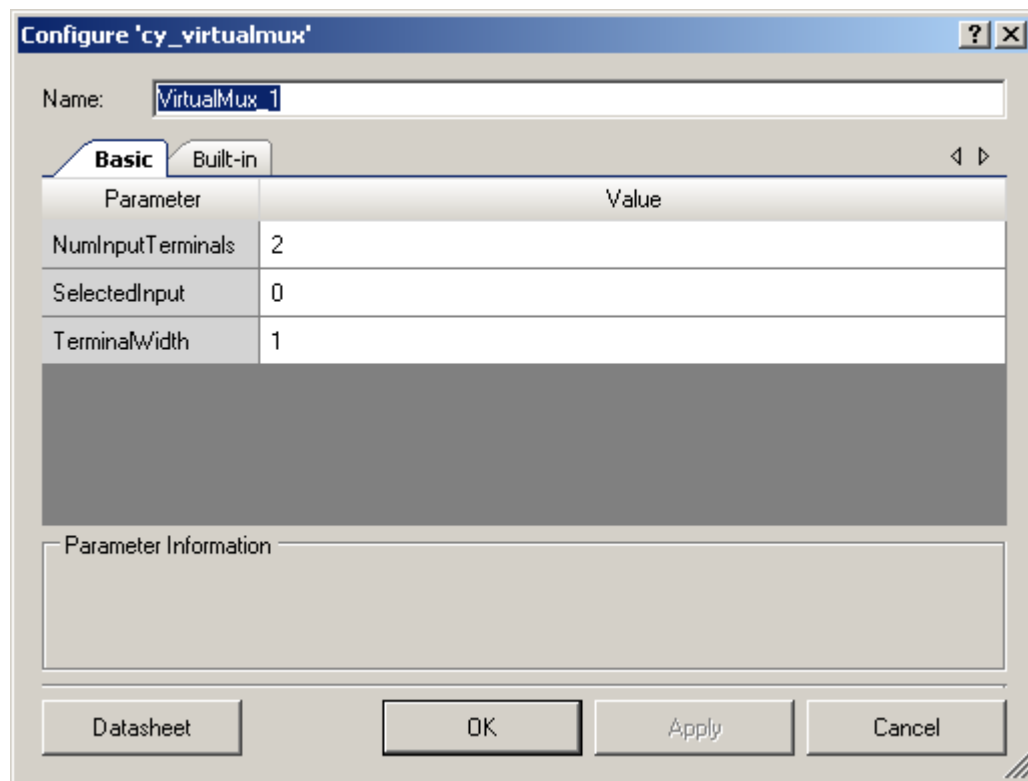
There are N inputs, indexed from 0 to N – 1. There is a minimum of two inputs, in\_0 and in\_1, for digital virtual mux. There is a minimum of one input, in\_0, for analog virtual mux.

### selected\_out – Output

The output terminal is named selected\_out.

## Component Parameters

Drag a virtual mux onto your component schematic canvas and double-click it to open the **Configure** dialog.



Configure 'cy\_virtualmux'

Name: VirtualMux\_1

**Basic** Built-in

Parameter	Value
NumInputTerminals	2
SelectedInput	0
TerminalWidth	1

Parameter Information

Datasheet OK Apply Cancel

The virtual mux provides the following parameters:

### NumInputTerminals

Specifies the number of input terminals; the default is **2**.

### SelectedInput

Specifies which input (numbered from the default **0**) should be connected to the output.

### TerminalWidth

Determines the common width of all the input and output terminals; default is **1**.

## Functional Description

Virtual muxes, in general, consume no chip resources. In effect, they short the selected input to the output connection.



## Component Changes

This section lists the major changes in the component from the previous version.

Version	Description of Changes
1.0.b	Datasheet corrections
1.0.a	Minor datasheet edits and updates

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