Analog Mux Constraint

1.50

Features



- Limits analog routing of an switchable mux connection to a specific routing resource
- All terminals on the signal must connect directly to the routing resource

  Note Routing is strict. All of the devices connected to the net with the resource constraint must have a direct hardware connection to the resource. Refer to the Analog Routing Diagram in the applicable Technical Reference Manual (TRM), which is available from the Cypress website, www.cypress.com. If the resources do not have a hardware connection to the specified constraint, an error will occur.

General Description

The Analog Mux Constraint component allows you to define the route of the analog signal on the switchable mux connection to which it is connected. This is an advanced feature that is not needed for most designs, and should be used with caution.

When to Use an Analog Mux Constraint

The Analog Mux Constraint should be used to manually control analog routing when strict control over the signal routing is required.

Input/Output Connections

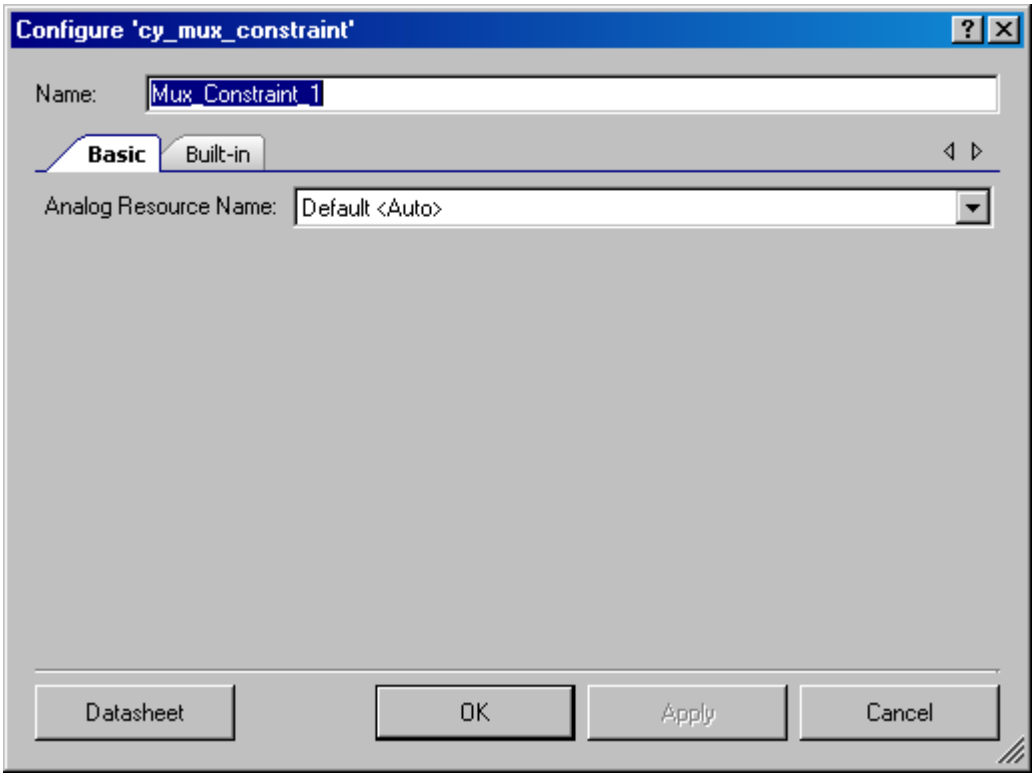
This section describes the various input and output connections for the Analog Mux Constraint.

connect – Input /Output

Provides the connection to the analog signal to which the Analog Mux Constraint applies.

Component Parameters

Drag an Analog Mux Constraint onto your design and double-click it to open the **Configure** dialog.



The Analog Mux Constraint provides the following parameters.

Analog Resource Name

The analog resource to assign to the connected signal. The default value, **Auto**, has no effect. The routing resource list depends on the selected family.

Placement

The Analog Mux Constraint consumes hardware resources, because it specifies which hardware resource must be used by the router. It has no other placement specification.

Resources

The Analog Mux Constraint component causes the connected analog signal to consume the selected analog routing resource.

Functional Description

The following analog routing resource names are available for PSoC 3 and PSoC 5. Not every analog routing resource connects to every component terminal. For detailed information about analog connectivity, refer to the applicable device datasheet and TRM. These documents are available on the Cypress website, www.cypress.com.

- Analog globals: AGL[0] – AGL[7], AGR[0] – AGR[7]
- Analog local bus: abusl0 – abusl3, abusr0 – abusr3
- Analog mux bus: AMUXBUSL, AMUXBUSR
- Combined left/right resources: AG[0] – AG[7], abus0 – abus3, AMUXBUS

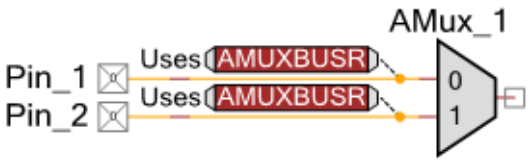
When a Analog Mux Constraint is present on a signal, the signal will be routed using **only** the specified resource. All of the component terminals connected to the signal must have a direct connection to the routing resource. The analog placer might not be able to automatically ensure that components are placed in way that satisfies Analog Mux Constraints. Components connected to constrained signals should be placed manually.

Analog Mux Constraint Example

The Analog Mux Constraint must be connected to a switchable connection of an analog mux. It controls the routing of the mux rather than the routing of the input signal.

Figure 1 shows that the constraint applies to the routing of the AMux. Pin_1 is connected to Pin_2 when the firmware connects both inputs of the AMux.

Figure 1. Analog Resource Constrained with AMux



Component Changes

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

Version	Description of Changes	Reason for Changes / Impact
1.50.b	The component was made visible for PSoC 6.	
1.50.a	Minor datasheet edits and updates	

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