

s_d_filter_z1_p1 (subcircuit)

Attributes

```
inputs: x
outputs: y
e_left_nodes:
e_right_nodes:
e_top_nodes:
e_bottom_nodes:
b_left_nodes:
b_right_nodes:
b_top_nodes:
b_bottom_nodes:
parameters:
  a0: 1
  a1: 1
  b0: 1
  b1: 1
  sampler_index: 0
```

Description

s_d_filter_z1_p1 is a digital (discrete) filter with x as input and y as output. The input is expected to be a sampled quantity. s_d_filter_z1_p1 implements the following transfer function.

$$H(z) = \frac{b_0 + b_1 z^{-1}}{a_0 + a_1 z^{-1}}. \quad (1)$$

The parameter `sampler_index` is the `index` value assigned to the `sampler_1.xbe` block which performs the sample-and-hold operation associated with the input x .