

tb_cocotb.v

AUTHORS

JAY CONVERTINO

DATES

2024/12/09

INFORMATION

Brief

Test bench wrapper for cocotb

License MIT

Copyright 2024 Jay Convertino

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

tb_cocotb

```
module tb_cocotb #(
  parameter
    FIFO_DEPTH
    =
    4,
  parameter
    BUS_WIDTH
    =
    8
) ( input aclk, input arstn, output [(BUS_WIDTH*8)-1:0] m_axis_tdata, output
```

Test bench for axis_tiny_fifo. This will run a file through the system and write its output. These can then be compared to check for errors. If the files are identical, no errors. A FST file will be written.

Parameters

FIFO_DEPTH parameter	Number of transactions to buffer.
BUS_WIDTH parameter	Number of bytes for tdata width.

Ports

aclk	Clock for AXIS
arstn	Negative reset for AXIS
m_axis_tdata	Output data
m_axis_tvalid	When active high the output data is valid
m_axis_tlast	Indicates last word in stream.
m_axis_tready	When set active high the output device is ready for data.
s_axis_tdata	Input data
s_axis_tvalid	When set active high the input data is valid
s_axis_tlast	Is this the last word in the stream (active high).
s_axis_tready	When active high the device is ready for input data.

INSTANTIATED MODULES

dut

```
axis_tiny_fifo #(
    FIFO_DEPTH(FIFO_DEPTH),
    BUS_WIDTH(BUS_WIDTH)
) dut ( .aclk(aclk), .arstn(arstn), .s_axis_tvalid(s_axis_tvalid), .s_axis_tlast(s_axis_tlast), .m_axis_tdata(m_axis_tdata), .m_axis_tvalid(m_axis_tvalid), .m_axis_tlast(m_axis_tlast), .m_axis_tready(m_axis_tready), .s_axis_tdata(s_axis_tdata), .s_axis_tvalid(s_axis_tvalid), .s_axis_tlast(s_axis_tlast), .s_axis_tready(s_axis_tready) );
```

Device under test, axis_tiny_fifo