

# tb\_cocotb.v

---

## AUTHORS

---

JAY CONVERTINO

---

## DATES

---

2025/04/16

---

## INFORMATION

---

### Brief

---

Test bench wrapper for cocotb

### License MIT

---

Copyright 2025 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.BUS\_WIDTH

## tb\_cocotb

---

```
module tb_cocotb #(
  parameter
  BUS_WIDTH
  =
  4
) ( input clk, input rstn, input ena, input load, output [BUS_WIDTH*8-1:0]
```

SIPO interface DUT

### Parameters

**BUS\_WIDTH**      Width of the APB3 bus data port in bytes.  
*parameter*

Ports

clk	Clock
rstn	negative reset
ena	enable for core, use to change input rate. Enable serial shift input.
load	load parallel data from core, and reset counters for next incoming serial data.
pdata	parallel data output, valid when dcount is BUS_WIDTH*8.
sdata	serialized data input.
dcount	Number of bits to shift out. BUS_WIDTH*8 means all bits have been sampled and put into the register.

INSTANTIATED MODULES

---

dut

---

```
sipo #(
    .BUS_WIDTH(BUS_WIDTH)
) dut ( .clk(clk), .rstn(rstn), .ena(ena), .load(load), .pdata(pdata), .sdata(sdata))
```

Device under test, sipo