tb_cocotb_up.v

AUTHORS

JAY CONVERTINO

DATES

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INFORMATION

Brief

Test bench wrapper for cocotb

License MIT

tb_cocotb

```
module tb_cocotb #(
parameter
ADDRESS_WIDTH
 =
32,
parameter
BUS_WIDTH
 =
4,
parameter
GPIO_WIDTH
 =
32,
parameter
```

```
 IRQ_ENABLE
  =
 0
) ( input clk, input rstn, input up_rreq, output up_rack, input [ADDRESS_WI
```

uP GPIO testbench

Parameters

ADDRESS_WIDTH	Width of the uP address port, max 32 bit.
parameter		
BUS_WIDTH	Width of the uP bus data port.
parameter		
GPIO_WIDTH	Width of the GPIO for inputs and outputs
parameter		
IRQ_ENABLE	Enable interrupt
parameter		

Ports

clk	Clock for all devices in the core
rstn	Negative reset
up_rreq	uP bus read request
up_rack	uP bus read ack
up_raddr	uP bus read address
up_rdata	uP bus read data
up_wreq	uP bus write request
up_wack	uP bus write ack
up_waddr	uP bus write address
up_wdata	uP bus write data
irq	Interrupt when data is received
gpio_io_i	Input for GPIO
gpio_io_o	Output for GPIO
gpio_io_t	Tristate for GPIO

INSTANTIATED MODULES

dut

```
up_gpio #(
                                                                        .
ADDRESS_WIDTH(ADDRESS_WIDTH),
                                                                        .
BUS_WIDTH(BUS_WIDTH),
                                                                        .
GPIO_WIDTH(GPIO_WIDTH),
                                                                        .
IRQ_ENABLE(IRQ_ENABLE)
) dut ( .clk(clk), .rstn(rstn), .up_rreq(up_rreq), .up_rack(up_rack), .up_ra
```

Device under test, up_gpio