tb_cocotb.v

AUTHORS

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DATES

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INFORMATION

Brief

Test bench wrapper for cocotb

License MIT

tb_cocotb

```verilog
module tb_cocotb #(
parameter
CLOCK_SPEED
 =
2000000,
parameter
BAUD_RATE
 =
2000000,
parameter
PARITY_TYPE
 =
0,
parameter
```

```
    STOP_BITS
      =
    1,
    parameter
    DATA_BITS
      =
    8,
    parameter
    RX_BAUD_DELAY
      =
    0,
    parameter
    TX_BAUD_DELAY
      =
    0
) ( input aclk, input arstn, output parity_err, output frame_err, input [ 7
```

Test bench for axis uart.

Parameters

BAUD_CLOCK_SPEED	This is the aclk frequency in Hz
BAUD_RATE parameter	Serial Baud, this can be any value including non-standard.
PARITY_ENA	Enable Parity for the data in and out.
PARITY_TYPE parameter	Set the parity type, 0 = even, 1 = odd, 2 = mark, 3 = space.
STOP_BITS parameter	Number of stop bits, 0 to crazy non-standard amounts.
DATA_BITS parameter	Number of data bits, 1 to crazy non-standard amounts.
RX_DELAY	Delay in rx data input.
RX_BAUD_DELAY parameter	Delay in rx baud enable. This will delay when we sample a bit (default is midpoint when rx delay is 0).
TX_DELAY	Delay in tx data output. Delays the time to output of the data.
TX_BAUD_DELAY parameter	Delay in tx baud enable. This will delay the time the bit output starts.
BUS_WIDTH	AXIS data bus width in bytes.

Ports

aclk	Clock for AXIS
arstn	Negative reset for AXIS
parity_err	Indicates error with parity check (active high)
frame_err	Indicates error with frame (active high)
s_axis_tdata	Input data for UART TX.
s_axis_tvalid	When set active high the input data is valid
s_axis_tready	When active high the device is ready for input data.
m_axis_tdata	Output data from UART RX
m_axis_tvalid	When active high the output data is valid
m_axis_tready	When set active high the output device is ready for data.
uart_clk	Clock used for BAUD rate generation
uart_rstn	Negative reset for UART, for anything clocked on uart_clk
tx	transmit for UART (output to RX)

rx	receive for UART (input from TX)
rts	request to send is a loop with CTS
cts	clear to send is a loop with RTS

INSTANTIATED MODULES

dut

```
fast_axis_uart #(
                                                                    .
CLOCK_SPEED(CLOCK_SPEED),
                                                                    .
BAUD_RATE(BAUD_RATE),
                                                                    .
PARITY_TYPE(PARITY_TYPE),
                                                                    .
STOP_BITS(STOP_BITS),
                                                                    .
DATA_BITS(DATA_BITS),
                                                                    .
RX_BAUD_DELAY(RX_BAUD_DELAY),
                                                                    .
TX_BAUD_DELAY(TX_BAUD_DELAY)
) dut ( .aclk(aclk), .arstn(arstn), .parity_err(parity_err), .frame_err(fram
```

Device under test, fast_axis_uart