axis_moving_average.v

AUTHORS

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DATES

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INFORMATION

Brief

AXIS moving average for unsigned numbers.

License MIT

axis_moving_average

```
module axis_moving_average #(
parameter
BUS_WIDTH
 =
1,
parameter
WEIGHT
 =
1
) ( input aclk, input arstn, output [8*BUS_WIDTH-1:0] m_axis_tdata, output r
```

AXIS moving average for unsigned numbers.

Parameters

BUS_WIDTH parameter — Width of the BUS in bytes.

WEIGHT parameter — How many elements, rounded to a power of two, to accumulate.

Ports

aclk	Clock for AXIS
arstn	Negative reset for AXIS
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.

VARIABLES

m_axis_tdata

```
assign m_axis_tdata = r_accumulator[(
                                                                8*BUS_WIDTH+
c_WEIGHT_POWER
                                                                           -
1
):c_WEIGHT_POWER]
```

Trim and shift data to get amount, this is the divide out.

m_axis_tvalid

```
assign m_axis_tvalid = s_axis_tvalid
```

Single clock edge valid

s_axis_tready

```
assign s_axis_tready = m_axis_tready
```

We are ready if the destination is ready