

VirtualDspinRouter

1) Functional Description

This is the elementary node of a Virtual Dspin Array.

2) Component definition & usage

[source:trunk/soclib/soclib/module/network_component/virtual_dspin_router/caba/metadata/virtual_dspin_router.sd?](#)

3) CABA implementation

CABA sources

interface [source:trunk/soclib/soclib/module/network_component/virtual_dspin_router/caba/source/include/virtual_dspin_router.caba.h](#)

implementation [source:trunk/soclib/soclib/module/network_component/virtual_dspin_router/caba/source/src/virtual_dspin_router.c](#)

CABA Internal registers

sc_signal<int>	r_output_index[2][5];	for each channel & each output, input index (INFSM)
sc_signal<bool>	r_input_alloc[2][5];	for each channel & each input, alloc
sc_signal<bool>	r_tdm[5];	for each input, Time Multiplexing
sc_signal<sc_uint<data_size>>	r_buf[2][5];	for each channel & each input, fifo extension
sc_signal<int>	r_infsm[2][5];	for each channel & each input FSM state

CABA Template parameters

int data_size	Size of flit
int io_mask_offset	Emplacement of IO checking
int io_mask_size	Size of IO checking
int io_number_offset	Emplacement of IO index in IO table
int io_number_size	Size of IO index
int x_addressing_offset	Emplacement of target x in first flit
int x_addressing_size	Size of target x
int y_addressing_offset	Emplacement of target y in first flit
int y_addressing_size	Size of target y
int eop_offset	Emplacement of eop checking
int broadcast_offset	Emplacement of broadcast checking
int in_fifo_size	Size of input fifos
int out_fifo_size	Size of output fifos
int x_min_offset	Emplacement of x_min for broadcast confinement
int x_max_offset	Emplacement of x_max for broadcast confinement
int y_min_offset	Emplacement of y_min for broadcast confinement
int y_max_offset	Emplacement of y_max for broadcast confinement

CABA Constructor parameters

sc_module_name	insname	instance name
int x		x position in the network
int y		y position in the network
bool n		North connexion enabled
bool s		South connexion enabled
bool e		East connexion enabled
bool w		West connexion enabled
bool broadcast0		Broadcast activated for channel 0
bool broadcast1		Broadcast activated for channel 1
bool io0		IO enable for channel 0
bool io1		IO enable for channel 1
clusterCoordinates<x_addressing_size, y_addressing_size> * aIO_table		list of IO Clusters

CABA ports

sc_in<bool>	p_clk	Global system clock
sc_in<bool>	p_resetrn	Global system reset
DspinOutput<cmd_data_size>	p_out	For each output and each virtual channel
DspinInput<cmd_data_size>	p_in	For each input and each virtual channel

4) TLMT implementation

The TLM-T implementation is not available yet.