

VirtualDspinNetwork

1) Functional Description

The Virtual Dspin Network aims to connect a two-dimensionnal array of TSAR clusters together. It virtualizes two virtual channels (usually the primary channel and the memory-coherence channel) on two physical networks [VirtualDspinArray](#) of different size (usually one for command paquets and one for response paquets). It implements the optimized and confined broadcast protocol on first network for second channel and the Hypertransport routing on both networks for the first channel.

2) Component definition & usage

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

3) CABA implementation

CABA sources

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

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

CABA Template parameters

int io_mask_size	Size in bits of IO checking
int io_number_size	Size in bits of IO index
int x_addressing_size	Size in bits of first coordinate addressing
int y_addressing_size	Size of second coordinate addressing
int cmd_data_size	Size in bits of command flits
int cmd_io_mask_offset	Emplacement of IO checking in command paquets
int cmd_io_number_offset	Emplacement of IO index in IO table in command paquets
int cmd_x_addressing_offset	Emplacement of target x in first flit in command paquets
int cmd_y_addressing_offset	Emplacement of target y in first flit in command paquets
int cmd_eop_offset	Emplacement of eop checking in command paquets
int cmd_broadcast_offset	Emplacement of broadcast checking in command paquets
int rsp_data_size	Size in bits of response flits
int rsp_io_mask_offset	Emplacement of IO checking in response paquets
int rsp_io_number_offset	Emplacement of IO index in IO table in response paquets
int rsp_x_addressing_offset	Emplacement of target x in first flit in response paquets
int rsp_y_addressing_offset	Emplacement of target y in first flit in response paquets
int rsp_eop_offset	Emplacement of eop checking in response paquets
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 size_x

width of network

int size_y

height of network

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_cmd** For each cluster and each virtual channel : out command

DspinInput<cmd_data_size> * p_in_cmd For each cluster and each virtual channel : in command

DspinOutput<rsp_data_size> * **p_out_rsp** For each cluster and each virtual channel : out response

DspinInput<rsp_data_size> * p_in_rsp For each cluster and each virtual channel : in response

4) TLMT implementation

The TLM-T implementation is not available yet.