PSB-64

# PCI-SCI Bridge Chips for System Area Networks


*Dolphin´s PCI-SCI Bridge (PSB) Chip provides a reliable, very high bandwidth and low-latency connection between PCI buses, making it ideally suited for server clustering and high performance system area network applications.*

The PSB-64 chip is designed to meet the requirements for high availability clustering and remote I/O applications. In a unique architecture combining both direct memory access (DMA) and remote memory access (RMA), high performance message passing protocols and transparent bus bridging operations are supported. The PSB chip is based on the ANSI/IEEE Scalable Coherent Interface (SCI) standard.

By use of the DMA controller chunks of memory can be copied directly between PCI buses in a single copy operation with no need for intermediate buffering in adapter cards or buffer memories. This feature greatly reduces latency and lowers overhead of data transfers. The DMA controller supports both read and write operations.

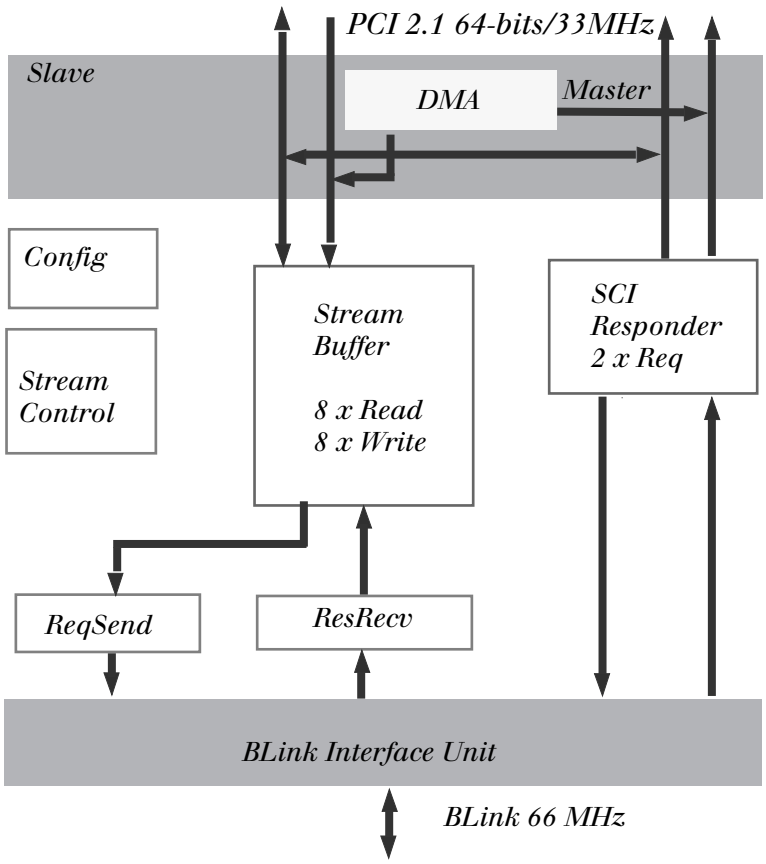
The remote memory access (RMA) feature of the PSB enables ultra-low latency messaging and low overhead and transparent I/O transfers. In RMA mode, PCI bus memory transactions are converted into corresponding SCI bus memory transactions allowing two physically separate PCI buses to appear as one. This feature allows applications to send data between system memories without the use of operating system services, thus greatly reducing latency and overhead.

The PSB has built-in address translation, error detection and protection mechanisms to support highly reliable connections.

## *Features and Benefits*

- PCI 2.1 compliant, 64 bits, 33 MHz PCI bus
- ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant
- ANSI/IEEE 1159.1 (JTAG) support
- Compatible with Dolphin Link Controllers
- Chaining (Read/Write) DMA Engine
- Up to 4096 map entries in offchip SRAM
- 4 - 512 KBytes page size
- Hostbridge capability (PCI arbiter, Event reporter)
- Read prefetching/write gathering
- B-Link™ Compliant

## Block Diagram




## Technical Specifications

***PCI Specification***
PCI Specification 2.1
64 bits, 33 MHz operation
3.3V/5V PCI bus operation

***B-Link Specification***
64 bits, 50 MHz operation
500 Mbytes/sec bandwidth

***SCI Specification***
ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) compliant

***Packaging and Power***
313 Ball Grid Array
3 Watts
3.3V or 5V I/O

***Operating Temperature***
Operating Temperature: 4˚C–32˚C
Relative Humidity: 5%–95% non-condensing

***Performance***
33 MHz
140 MBytes/sec RMA
107 MBytes/sec DMA

***Product Code***
PSB-64 (D667)

***Dolphin Interconnect Solutions Offices:***

**Dolphin Headquarters USA:**
3609 East Thousand Oaks Blvd, Suite 209
Westlake Village, CA 91362-3624

**Phone:**
(805) 371-9493
**Fax:**
(805) 371-9785

**Dolphin USA:**
111 Speen Street
Framingham, MA 01701-2090

**Phone:**
(508) 875-3030
**Fax:**
(508) 875-1517

**Dolphin Europe:**
Olaf Helsets vei 6
0621 Oslo, Norway

**Phone:**
+ 47 23 16 70 00
**Fax:**
+ 47 23 16 71 80

**Internet Information:**
E-mail: info@dolphinics.com
World Wide Web: http://www.dolphinics.com