

SCI Link Controller for System Area Networks



Features and Benefits

- 500 MBytes/s Duplex link bandwidth for high performance applications
- Low latency, 48 ns bypass latency
- ANSI/IEEE 1596-1992 Scalable Coherent Interface (SCI) standard compliant
- ANSI/IEEE 1212 Computer Status Register (CSR) support
- ANSI/IEEE 1159.1 (JTAG) support
- Low voltage differential (LVDS) link signalling for low power, reliability and noise immunity
- Built-in RAS features for guaranteed data delivery, error detection, recovery and hot pluggable links
- 64-bit, 100 MHz LVTTTL B-Link™ interface

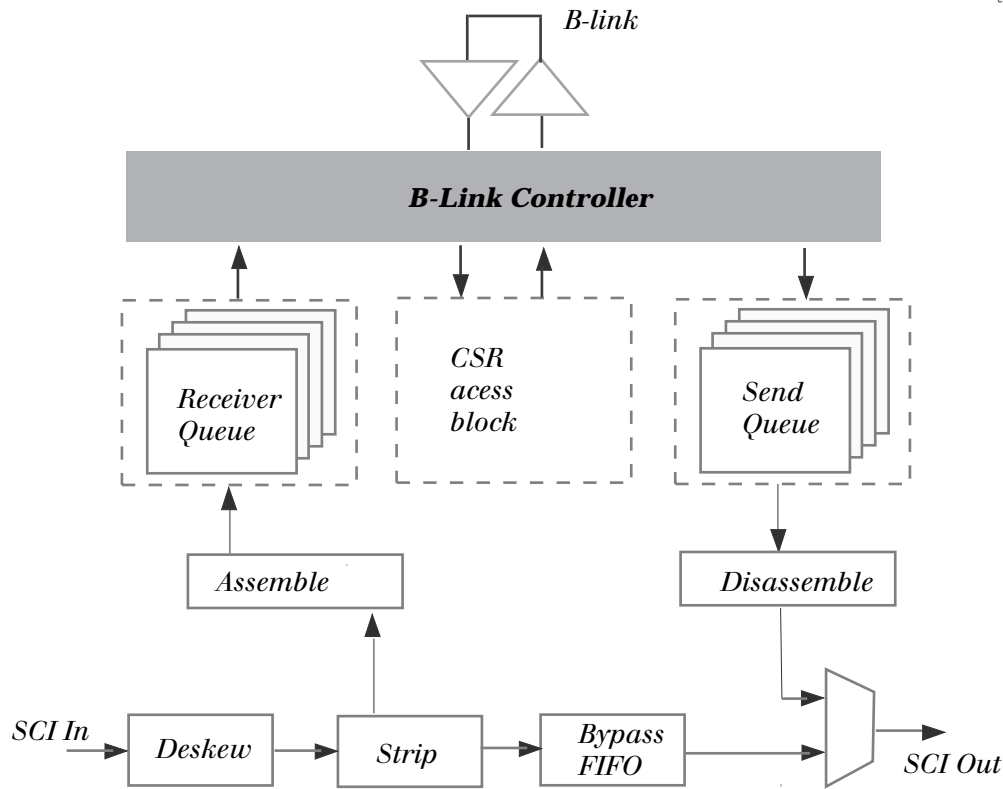
Dolphin's SCI Link Controller Chip (LC2) is the leading implementation of the ANSI/IEEE Scalable Coherent Interface standard with duplex bandwidth of 500 MByte/s.

The LC2 is designed to meet the system area network requirements in ccNUMA servers, high availability server clusters and remote I/O subsystems. Based on CMOS processing technology and LVDS signalling, the LC2 is an economical, reliable and powerful link interface for high performance applications.

LC2 guarantees delivery of SCI packets with payloads up to 64 bytes of data. Internal buffers allow for pipelining of packets for high throughput operation, yet supports virtual cut-through routing for low latency access.

Two unidirectional 16-bit LVDS links transmit data at 500 MBytes/s over a backplane or a cable. A backside link interface (B-Link™) allows a companion controller ASIC to easily connect to the LC2. The LC supports both message passing controllers (such as Dolphin's PSB chip) and cache coherence controllers (such as Dolphin's SCC chip). Multiple LCs can also communicate on the same BLink thus enabling construction of switches and counter rotating rings.

Block Diagram



Technical Specifications

Link Specification

500 MBytes/s each direction.
4 entry input and output queues

B-Link Specification

64 bits, 100 MHz operation
800 MBytes/s bandwidth

SCI Specification

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

Packaging and Power

225 Plastic BGA Package (50 mil centers)
Max. 2.5W, VDD +3.3V

Operating Temperature

Operating Temperature: 4°C–32°C
Relative Humidity: 5%–95% non-condensing
Altitude: 0-3000 meters

RoutingSupport

Switches, Ring, MESH,
Table based routing with
support for 64k nodes

Simulation Models

Verilog model available

Product Code

LC2

Product no.

D657

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 Helsetts 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>

© 1998 by Dolphin Interconnect Solutions, Inc. All rights reserved.
Specifications subject to change without notice. *LinkController* is a trademark of Dolphin Interconnect Solutions. All other brand or product names are trademarks or registered trademarks of their respective holders.