SYSTEM

Product Information

CS1-BRASS • CompactPCI® Wide Ultra SCSI Hostadapter

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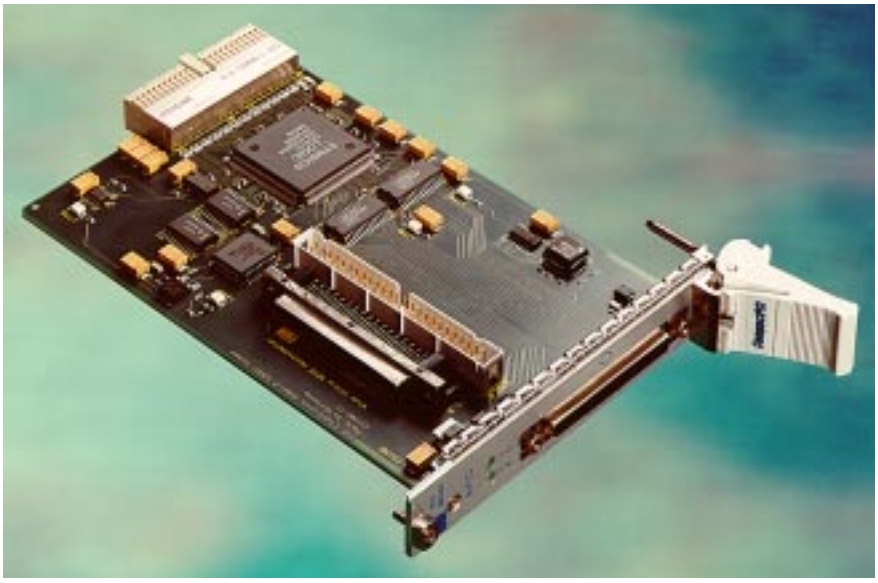
The **CS1-BRASS is** an universal, **CompactPCI®** based **Wide Ultra SCSI Hostadapter**, suitable for controlling of 8- and 16-Bit SCSI peripherals as harddisks, streamer tapes, MO-drives, or CD/DVD recorders. The CS1-BRASS hostadapter is provided with a single ended SCSI-3 interface, offering a data transfer rate of 40MByte/s when operated in the Wide and Ultra modes. Compatibility is maintained to all previous SCSI standards, e.g. asynchronous (SCSI-1) or Fast SCSI.

In a coloured environment (simultaneous use of peripherals conforming to different SCSI standards), the data rate in effect is switched to its maximum for any individual device. SCAM (SCSI Configured AutoMatically) as well as PCI plug&play technology care for easy installation and smooth system integration of the CS1-BRASS. Drivers are available for any popular operating system.



CS1-BRASS

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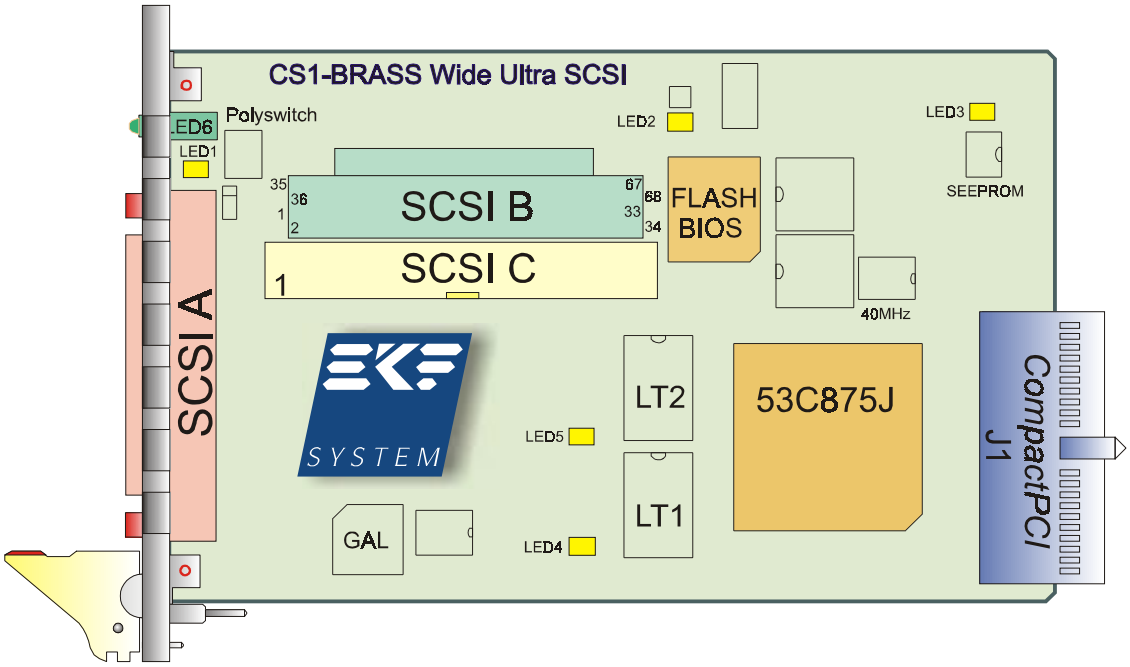

CS1-BRASS • Component Assembly Drawing

The CS1-BRASS allows for attachment of up to 7 devices with 8-Bit (Narrow) SCSI interface or 15 peripherals with 16-Bit (Wide) connector. Internal and/or external mounting of the devices is at the users choice; the active termination of the CS1 follows any configuration automatically. The jumperless board is built around the LSI (Symbios) Logic SYM53C875 PCI-SCSI I/O processor, a high performance, widely accepted industry standard chip. Being also compatible to the popular SYM8751SP hostadapter board, the CS1-BRASS can be used with all Symbios Logic software (e.g. the Device Management System SDMS 4.x), and all existing SYM8751SP drivers for operating systems as Windows9x/NT or Linux are valid also for the CS1-BRASS.

For flexible cabling, the CS1 is provided with three SCSI connectors for internal and external use. Any combination of two of the SCSI connectors can be used together at the same time:

The 68-position SCSI-3 receptacle SCSI_A is mounted to the front panel of the CS1-BRASS. External SCSI devices with a 16-Bit Wide interface can be connected directly here (most commonly by a round cable); 8-Bit (Narrow) SCSI peripherals need an adapter (connector or cable) in order to reduce from 68- to 50-pins.

Internal 8-Bit SCSI devices can be directly attached to the 50-way header connector SCSI_C, by using a conventional flat cable (1.27mm pitch).

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The SCSI-3 receptacle SCSI_B is provided for internal wiring to 16-Bit Wide SCSI devices, mounted within the **CompactPCI®** rack. This connector typically will be used together with a fine-pitch microribbon flat cable (0.635mm).

Peripherals, attached to any of the three SCSI connectors, are sensed by a logic circuitry. If the logic detects the CS1-BRASS to be one end of the SCSI bus, the local SCSI terminators are activated. Because the terminators for D0..D7 and D8..D15 are switched individually, also external Wide devices at SCSI A and internal Narrow devices at SCSI C can be used simultaneous. Using all three SCSI connectors together (hub) cannot be allowed while the SCSI topolgy is restricted to a bus structure. The CS1-BRASS sources the voltage for the on-board and external SCSI terminators (TERMPOWER), fused by a Polyswitch (reversible fuse).

The CS1-BRASS is equipped with a Flash Extended BIOS, allowing operating system boot from a SCSI drive. The Flash-EEPROM can be updated at any time by means of a DOS utility program. The CS1-BRASS is additionally provided with a serial EEPROM, acting as a NVRAM, saving configuration parameters of the board (e.g. for SCAM support).

As a help for installation or fault detection, several LED's show interesting board status information.

SCSI Bus data and control signal integrity will be improved by the SCSI controller chip using the Symbios Tolerant™ filtering technology, thus minimizing the influence of a critical SCSI cabling (poor cables, mixed cable types, noisy environment).

A toolset already mentioned, but worth to be more intensively discussed is the LSI (Symbios) Logic SCSI Device Management Software SDMS, running on the CC1-BRASS without any modification. SDMS is a package of utilities and drivers, including ASPI, RAID, or removeable media support for popular disk operating systems. As a resident part of the SDMS, basic routines are contained within the on-board Flash Extended BIOS. Like any other BIOS routine, this resident software does not depend on an individual OS, but allows standalone operation and diagnostics instead, e.g. low level harddisk formatting or SCSI bus configuration. In order to obtain actual information or download the latest firmware release, the LSI Logic Internet site http://www.lsilogic.com should be visited.

Needless to discuss the advantages of SCSI, as superiour data throughput at minimal CPU load. With the CS1-BRASS, your **CompactPCI®** *system too can profit from Wide Ultra SCSI performance. The CS1-BRASS is a high reliability, industrial grade product, available at moderate cost, and - last not least - fast and smoothly to be installed.*

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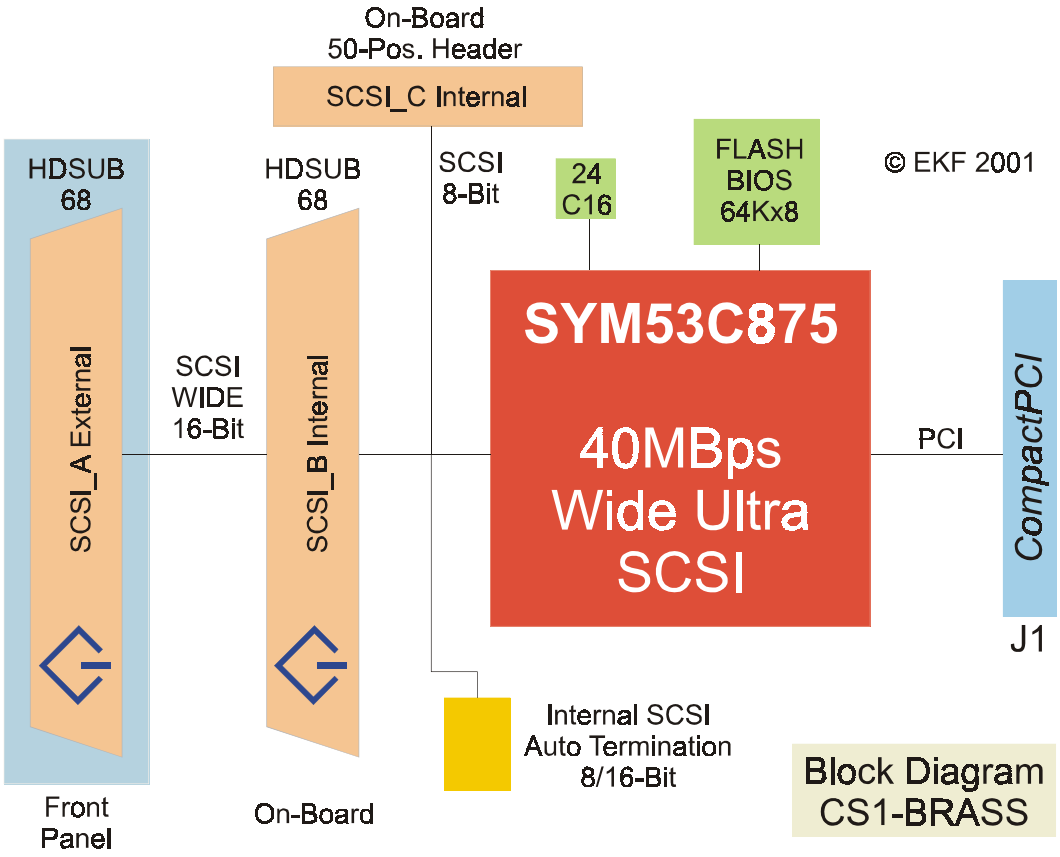

CS1-BRASS Block Diagram

LED1	SCSI Bus Busy signal
LED2	Flash EEPROM programming (+12V switched on)
LED3	Serial EEPROM read or write cycle
LED4	SCSI line terminator LT1 activated (data bits D8-D15, parity DP1)
LED5	SCSI line terminator LT2 activated (data bits D0-D7, parity DP0, control signals)
LED6 (FP left)	SCSI bus TERMPOWER (+4.7V) by internal or external source
LED6 (FP right)	SYM53C875 I/O processor activity

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Technical Specifications

- **Printed Circuit Board**
  - 3U Eurocard (100x160mm^2)
  - front panel 20.3mm, EMC compliant

- **SCSI Bus**
  - bus type 8/16-Bit, Single Ended, max. 7 devices (8-Bit), 15 devices (16-Bit)
  - external receptacle: 68-pos., high density socket (metal screen), screw lock 2-56 UNC (SCSI-3)
  - 1. connector internal: 68-pos. high density receptacle 90° (Wide)
  - 2. connector internal: 50-pos. header 2.54mm, 180° (Narrow)

  - overall cable length SCSI bus)
    - SCSI-1 (asynchronous) 6m
    - Fast SCSI and Wide Fast SCSI 3m
    - Ultra SCSI and Wide Ultra SCSI 3m (4 devices), 1.5m (8 devices)

  - performance
    - Synchronous
      Wide Ultra 40MB/s (16-Bit), Narrow Ultra 20MB/s (8-Bit)
      Wide Fast 20MB/s (16-Bit), Narrow Fast 10MB/s (8-Bit)
    - Asynchronous 14MB/s

  - termination
    - active, switched automatically
    - termination power with Polyswitch (reversible fuse 1,25A)

  - features of the I/O processor SYM53C875J
    - pre-fetches of 8 SCRIPTS™ dword instructions minimize PCI bus load
    - load and store SCRIPTS™ instruction increases performance
    - includes 4kB internal RAM for SCRIPTS™ instruction storage
    - optimized block transfers at Ultra SCSI clock rates
    - 536-Byte DMA FIFO
    - SCAM (SCSI Configured AutoMatically) level 1 functionality
    - target disconnect/reconnect (interrupt)
    - Symbios TolerANT™ SCSI signal filtering

- ***CompactPCI*®** **Bus**
  - PCI2.1, 32-Bit, 33MHz (133MB/s)
  - PCI extended access cycles
  - 32-Bit DMA bus master (133MB/s)
  - zero wait state PCI transfers
  - bursts up to 128 dwords across PCI bus
  - 3.3V or 5V interface

- **Power Supply (without Harddisk Option)**
  - +5V ±5% 1.5A max. (including termination power)
  - +3.3V ±0.3V 130mA max. (when operating in a 3.3V V_{IO} slot)
  - +12V ±5% 50mA max. (when programming Flash EEPROM)

- **Temperature/Humidity**
  - operating temperature range 0-70 °C, relative humidity range 5-90% non-condensing

specifications are subject to change without further notice

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Pin Orientation SCSI_A, SCSI_B			
1	GND	SD12#	35
2	GND	SD13#	36
3	GND	SD14#	37
4	GND	SD15#	38
5	GND	SDP1#	39
6	GND	SD0#	40
7	GND	SD1#	41
8	GND	SD2#	42
9	GND	SD3#	43
10	GND	SD45#	44
11	GND	SD5#	45
12	GND	SD6#	46
13	GND	SD7#	47
14	GND	SDP0#	48
15	GND	GND	49
16	GND	CPRSNT_A (B) [1]	50
17	TRMPWR	TRMPWR	51
18	TRMPWR	TRMPWR	52
19	*N/C*	*N/C*	53
20	GND	GND	54
21	GND	SATN#	55
22	GND	GND	56
23	GND	SBSY#	57
24	GND	SACK#	58
25	GND	SRST#	59
26	GND	SMSG#	60
27	GND	SSEL#	61
28	GND	SC/D#	62
29	GND	SREQ#	63
30	GND	SI/O#	64
31	GND	SD8#	65
32	GND	SD9#	66
33	GND	SD10#	67
34	GND	SD11#	68

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Pin Orientation SCSI_C			
GND	1	2	SD0#
GND	3	4	SD1#
GND	5	6	SD2#
GND	7	8	SD3#
GND	9	10	SD4#
GND	11	12	SD5#
GND	13	14	SD6#
GND	15	16	SD7#
GND	17	18	SDP0#
GND	19	20	GND
GND	21	22	CPRSNT_C# [1]
N/C	23	24	*N/C*
N/C	25	26	TRMPWR
N/C	27	28	*N/C*
GND	29	30	GND
GND	31	32	SATN#
GND	33	34	GND
GND	35	36	SBSY#
GND	37	38	SACK#
GND	39	40	SRST#
GND	41	42	SMSG#
GND	43	44	SSEL#
GND	45	46	SC/D#
GND	47	48	SREQ#
GND	49	50	SI/O#

[1] CPRSNT_A (B, C) is used to sense the connection of a SCSI device by sensing SCSI standard GND driven by the peripheral on this pin (input signal to the auto termination logic).

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Ordering Information		
Alias Name	Ordering No.	Short Description
BRASS	CS1-1-BRASS	3U *CompactPCI* Wide Ultra SCSI Hostadapter
	CR9-1-ADAPT	6U Front panel expansion kit

CR9-ADAPT

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