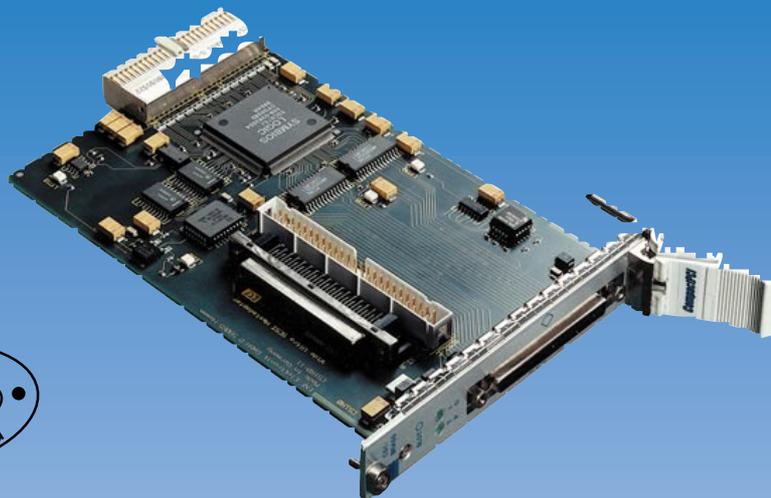




CS 1-BRASS

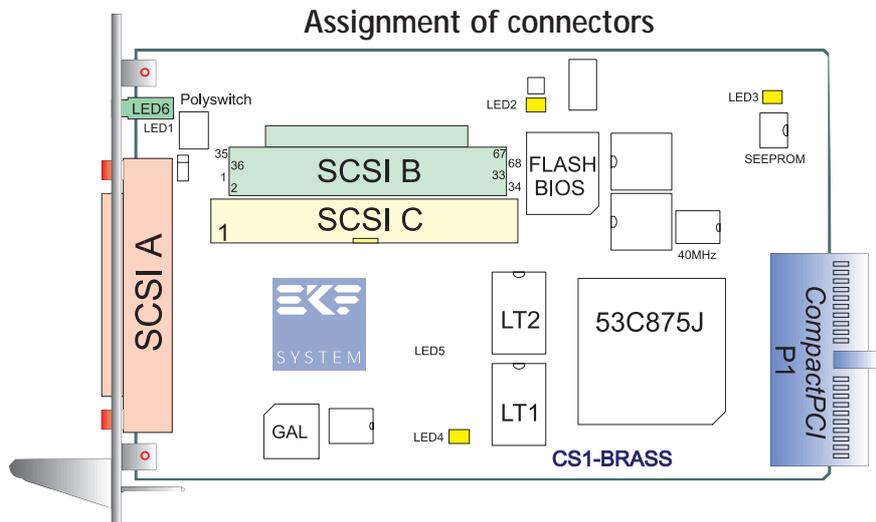
## **CompactPCI® Wide Ultra SCSI Hostadapter**



Successfully established as the new standard for modular industrial computers, a wide range of **CompactPCI®** CPU boards are available from several manufacturers. However, not all of the mainboards are equipped with an on-board SCSI interface.

This gap can be filled by the CS1-BRASS, a universal, **CompactPCI®** based Wide Ultra SCSI Hostadapter, suitable for controlling of 8- and 16-Bit SCSI peripherals as harddisks, MO-drives, CD-ROMs, Streamer Tapes, Scanners, Juke-Boxes etc. SCAM (SCSI Configured AutoMatically) as well as PCI plug&play technology care for easy installation and smooth system integration of the CS1-BRASS.

The CS1-BRASS hostadapter is provided with a single ended SCSI-3 interface, offering a data transfer rate of 40MB/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.



## CS 1-BRASS

The CS1-BRASS allows for connecting 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 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-pole SCSI-3 connector SCSI\_A is mounted to the front panel of the CS1-BRASS. External SCSI devices with 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.

The SCSI-3 connector 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).

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

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 topology is restricted to a bus structure.

The CS1-BRASS contains a Flash Extended BIOS, allowing operating system boot from a SCSI drive. The Flash-EEPROM can be updated at any time by



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

- 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** SCSI bus TERMPower (+4,7V) by internal or external source (FP left)
- LED6** SYM53C875 I/O processor activity (FP right)

means of a 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).

The CS1-BRASS sources the voltage for the on-board and external SCSI terminators (TERMPower), fused by a Polyswitch (reversible fuse).

*There is no need at all 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.*

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 Symbios 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 Symbios Internet site <http://www.symbios.com> should be visited.

The CS1-BRASS is a 3U (single size) Eurocard. For 6U **CompactPCI**® systems suitable is the CS2-BRASS, offering the same functionality on a 6U (double size) Eurocard. Free space on the CS2 can be used for directly mounting a 3.5 inch SCSI harddisk to it.

# Technical Specifications



- **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

- +5V ± 5% 1.5A max. (including termination power)
- +3,3V ± 0,3V 130mA max. (when operating in a 3.3V V<sub>IO</sub> 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*

## Printed Circuit Board

3U Eurocard (100x160mm<sup>2</sup>)  
front panel 20,2 mm, EMC compliant

## SCSI Bus

- bus type 8/16-Bit, Single Ended, max. 7 devices (8-Bit), 15 devices (16-Bit)
- connector external: 68-pole, high density socket (metal screen), screw lock 2-56 UNC (SCSI-3)
- 1. connector internal: 68-pol. high density socket 90% (Wide)
- 2. connector internal: 50-pol. 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

## Ordering informations

Short Form Alias	Ordering Number	Short Description
BRASS	CS1-1-BRASS	3U <b>CompactPCI</b> Wide Ultra SCSI Hostadapter
BRASS	CS2-1-BRASS	6U <b>CompactPCI</b> Wide Ultra SCSI Hostadapter



**EKF – Solutions inside!**

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