CPCI-HD/2

HD-Drive, CF-Card Slot and 2 SATA-Interfaces

Manual

to Product I.2318.xx

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Changes in the chapters

The changes in the document listed below affect changes in the hardware and firmware as well as changes in the description of facts only.

Chapter	Changes versus previous version
-	First English version

Technical details are subject to change without further notice.

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1. Overview

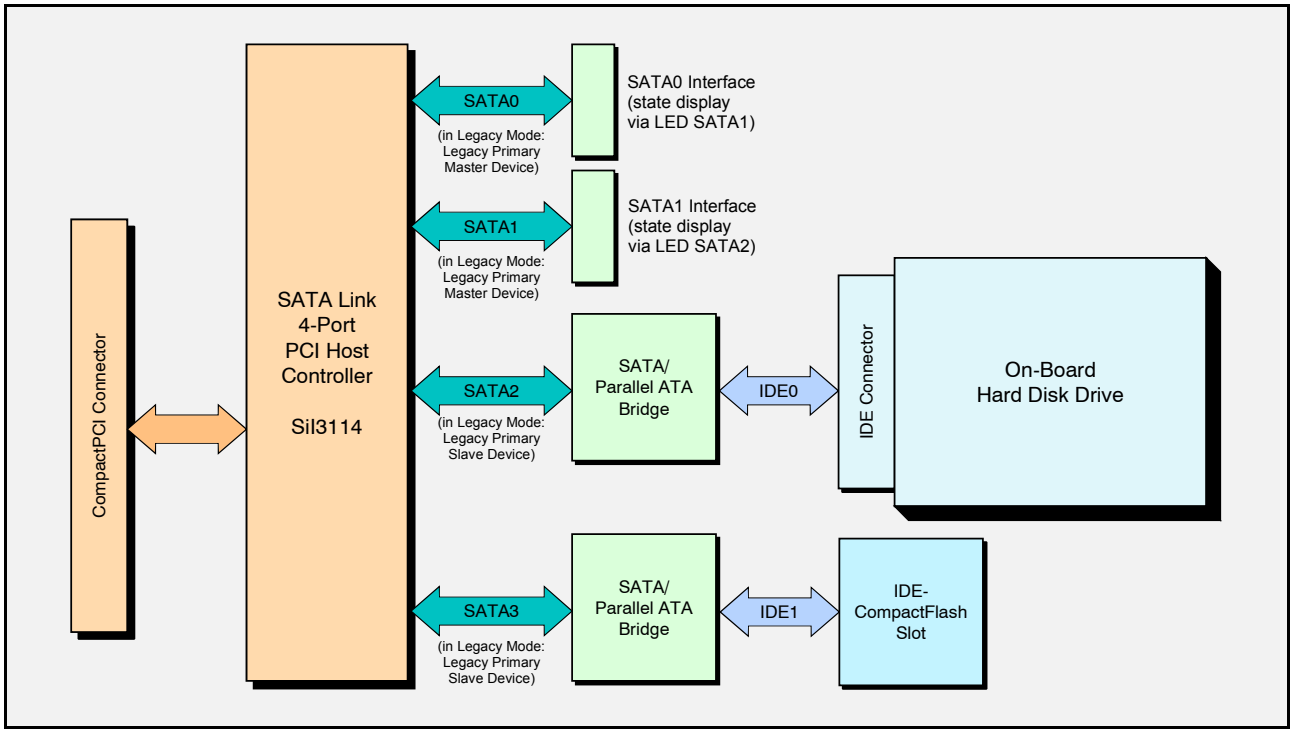
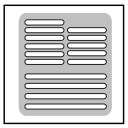


Fig. 1: CPCI-HD/2 block diagram

The module CPCI-HD/2 is a CompactPCI board in 3 U form factor (4 HP). It is equipped with the SATA-Controller SIL3114 that supports four SATA-channels. Two channels are used as Serial ATA interfaces, one channel is used to control a CompactFlash slot and one channel to control the local 2.5" HD drive. The factory installed HD capacity may change upwards with the improvement of drive technology.

The board is equipped with a type I CompactFlash card holder. The card slot is accessible through the front panel. The interface is 'hot-pluggable'. Data access is executed in 'True IDE mode'.

Two external devices can be attached via two on-board SATA plugs. Modification to rear I/O-connection is possible on request.



2. Technical Data

2.1 General Technical Data

Temperature range	0...50 ˚C ambient temperature
Humidity	max. 90%, non-condensing
Power supply	via CompactPCI-Bus, nominal supply voltages: 3.3 V / 80 mA 5 V / 1.5 A (starting current, typ. with 40 GB HDD), 5 V / 0.6 A (quiescent current)
Connectors	X0 (7-pin Serial ATA-connector, angled) - SATA0, interface for external drive X1 (7-pin Serial ATA-connector, angled) - SATA1, interface for external drive X2 (44-pin IDE-connector, male) - interface for local HDD, 2 mm grid X3 (50-pin AMP-C-FLASH male connector) - CompactFlash slot X100 (132-pin male connector) - CompactPCI-board connector test- and programming only: X4 (8-pin micro plug) - JTAG, Debug
Dimension	3 U, 4 HP
Weight	approx. 150 g without HDD

2.2 CompactPCI Bus

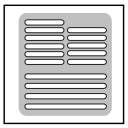
Host Bus	PCI bus according to PCI Local Bus Specification, Rev. 2.0
PCI-data/address bus	32 bit, 33/66 Mhz
PCI + SATA controller	SIL3114
Board dimensions	according to CompactPCI Specification, Rev. 2.0
Connectors	
Connector coding	no colour coding universal board (3.3 V or 5 V signal voltage tolerant)

2.3 HDD Interface

Number of local drives	1
Data transfer mode	Ultra DMA 6
ATA-device bridge	SIL 3811
HDD type	2.5”-HD drive, capacity ≥ 40 Gbyte (article I.2318.04 only)
HDD connector	44-pin IDE, 2 mm grid

2.4 CompactFlash-Interface

Number of CF-interfaces	1
Data transfer mode	Ultra DMA 6
ATA-device bridge	SIL 3811
CompactFlash	according to CompactFlash™ Specification, Type I CF-card slot, ‘True IDE Mode’, 3.3 V supply voltage, ‘hot-pluggable’



2.5 Interfaces for External Drives

Number of interfaces	2
Data transfer mode	SATA I (1.5 Gb/s)
Controller	SIL3114
Connector	7-pin Serial ATA-connector, angled modification to Rear-I/O connection available on request

2.6 Software Driver Support

Operating System	Supported Versions
Linux	from Kernel 2.6.19 (requires 'Silicon Image SATA Support' in Kernel), **Note:** 'hot-plug' supported
Windows	Windows 2000/XP, Windows Vista, Windows XP/2003 Server **Note:** 'hot-plug' supported
QNX	from version 6.x

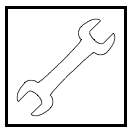
2.7 Order Information

Type	Features	Order No.
CPCI-HD/2	CF-card and SATA interface board with HDD - 2 interfaces for external SATA drives - 1 interface for on-board 2.5” IDE-HDD - 2.5” HDD installed, capacity ≥ 40 Gbyte - 1 CF-card slot (type I) in front panel	I.2318.04
CPCI-HD/2-SATA/IDE-Interface	CF-card and SATA interface board - 2 interfaces for external SATA drives - 1 interface for on-board 2.5” IDE-HDD (HDD **not** included) - 1 CF-card slot (type I) in front panel	I.2318.02
CPCI-HD/2-IDE-Kit	Mounting kit for 2.5” IDE-HDD	I.2318.03
CPCI-HD/2-ME	User manual in English [1*)]	I.2318.21
CPCI-HD/2-ENG	Engineering manual in English [2*)] Contents: Circuit diagrams, PCB top overlay drawings, data sheets of significant components	I.2318.25

[1*)] If module and manual are ordered together, the manual is free of charge.

[2*)] This manual is liable for costs, please contact our support.

Table 1: Order information



3. Hardware Installation

Attention!
Electro-static discharges may cause damage to electronic components. In order to avoid this please make sure to follow the steps below *before* touching the CPCI module:

- Switch off the power supply of your CompactPCI system, but leave it connected to mains.
- Now touch the metal case of the computer to discharge yourself.
- Even your clothes must not touch the CPCI module.

Installation Steps:

1. Switch off your CompactPCI system and all connected peripheral devices (monitor, printers, etc.).
2. Discharge yourself as described above.
3. Disconnect the CompactPCI system from mains.
4. Select an open 3U-CompactPCI bus position and insert the CPCI-HD/2 module into the slot selected. The module can be inserted into any 3U-slot.
5. Attach the module by means of the front panel screws.
6. Connect the CompactPCI system to mains again.
7. Switch on the CompactPCI system and the peripheral devices again.
8. End of hardware installation.
9. Now you can configure the HDD and the CompactFlash. Please read the documentation of your operating system for more information.

4. Front Panel and LEDs

The CPCI-HD/2 is equipped with four green LEDs in the front panel.

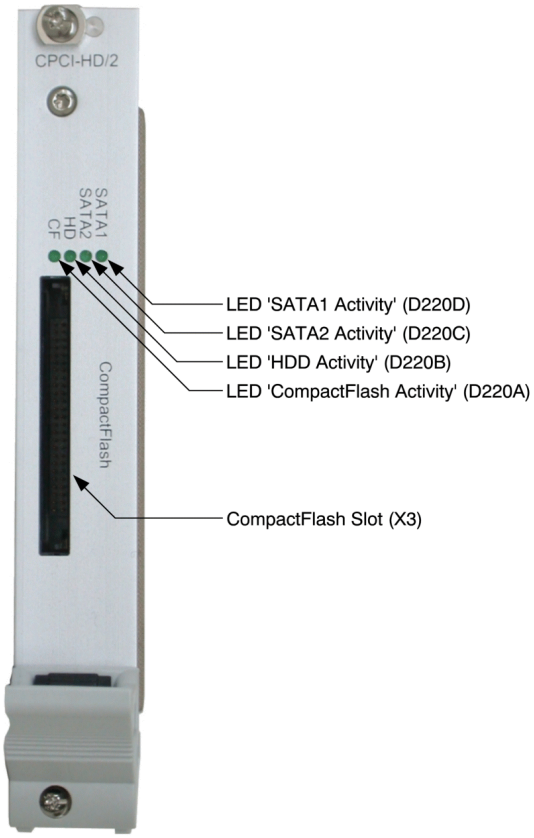


Fig. 2: LED position

LED			Displayed Status
Name	Color	Number	
SATA1	green	LED220D	data transfer at interface SATA0
SATA2	green	LED220C	data transfer at interface SATA1
HD	green	LED220B	data transfer at HDD interface
CF	green	LED220A	data transfer at CompactFlash interface

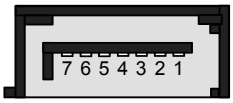
Table 2: LED status display code

5. Connector Assignment

5.1 SATA-Interface for external Drives

The connectors SATA0 (X0) and SATA1 (X1) have similar connector pin assignments according to the SATA interface.

Pin Position:



Pin Assignment:

Pin	7	6	5	4	3	2	1
Signal	GND	DT+	DT-	GND	DR-	DR+	GND

Signal Description:

DT+, DT-,
DR+, DR- ... Receive and transmit lines of the according interface. The data direction reference is the external drive (device).

GND... reference ground