D2 - 6U CompactPCI Pentium SBC

Embedded Solutions

◆ **Pentium (Tillamook) 266MHz**
◆ **1-slot 32-bit CompactPCI system master**
◆ **Ready for PXI**
◆ **640MB DRAM, 4MB SRAM, CompactFlash**
◆ **Graphics via PC-MIP**
◆ **10/100Mbit Fast Ethernet**
◆ **2 COMs, USB, 2 IDE, floppy, parallel, keyboard/mouse**
◆ **3 PC-MIP slots (Type I/II)**

The D2 is a Pentium single-board computer optimized for industrial requirements in control and instrumentation in terms of functionality, environmental conditions and cost. It needs only one slot in a CompactPCI system. Its "Socket 7+"-based computing core supports Tillamook CPUs up to 266MHz. The chip set comes with 100MHz CPU and 33MHz PCI bus clock and supports the latest DRAM technology. All PCI components are carefully selected for optimum support regarding long-term availability.

In addition to state-of-the-art PC functionality - such as 10/100Mbit Ethernet, UARTs, EIDE, LPT, Microsoft ACPI, floppy, GPIO and USB - the D2 is equipped with a bundle of industrial functions. These unique features are highly reliable, SMT-mounted SDRAM in addition to SO-DIMMs, SRAM as NOVRAM disk, flexible CompactFlash extension, BIOS extensions for non-video, boot from CompactFlash etc., support of PXI trigger signals (National Instruments), three local PC-MIP mezzanines for flexible and individual workstation I/O extensions like graphics, SCSI, additional serial lines, field buses etc. and various board and system control mechanisms.

The D2 CPU board is carefully prepared for all types of industrial qualification procedures such as extended temperature range (-40..+85°C), shock, vibration, humidity etc.

men mikro elektronik
gmbh · nürnberg

Embedded Solutions

Technical Data

CompactPCI Bus
- 6U CompactPCI CPU board rev. 2.1 compliant
- Ali Aladdin V chip set
  - · Compliance with PCI specification 2.1
  - · Up to 33 MHz PCI frequency
- 32-bit CompactPCI system slot functionality
- 7 possible external loads due to PCI-to-PCI bridge
- DEC 21150 PCI-to-PCI bridge
- Single-slot solution
- V(I/O): +3.3V or +5V (Universal Board)

CPU
- Pentium with MMX, 266MHz Tillamook (Pentium III class)
- Passive cooling
- Up to 100MHz local bus frequency

Memory
- 512KB Level 2 Cache
- 32..288MB DRAM
  - · 32MB on board
  - · 128MB each on two SO-DIMM sockets
  - · 100MHz SDRAM clock
- Up to 4 MB battery-backed SRAM for user applications
  - · Via local PCI bus
  - · No loss of data
- CompactFlash (TM) card interface for on-board Flash ATA
- 2Mbit BIOS Flash

Interfaces
- Two serial communication ports (COM1/COM2)
- COM1: RS232 physical interface
  - · 9-pin D-Sub connectors at front panel or via CompactPCI J4/J5
- COM2 via CompactPCI J5/J4
- Full-duplex 10/100Mbits/s PCI Ethernet controller
  - · 21143 PCI LAN controller
  - · 10Base-T/100Base-TX interface at front panel (RJ45 connector)
  - · Simultaneous transmission of 10Mbits/s and 100Mbits/s frames
  - · Supports network boot
- Three USB (Universal Serial Bus) interfaces
  - · Via CompactPCI J4/J5
  - · Conforming to Open HCI 1.0a
- Keyboard and mouse at 6-pin PS2 connector at front panel
- Parallel port (SPP, EPP, ECP) via CompactPCI J4/J5
- Optional GPIOs at J4/J5 or Fast IR interface

PXI
- Five trigger lines compliant with PXI Specification rev. 1.0

Local Extensions
- PC-MIP I/O at front panel or via CompactPCI rear I/O
- Three PC-MIP mezzanine extension slots compliant with PC-MIP specification (2 Type I/II slots, 1 Type I slot)

Mass Storage
- Two fast IDE interfaces
  - · Up to 33 MB/s (supports UltraDMA and PIO mode 4)
  - · Via Compact PCI J3/J4
- Floppy-disk controller
  - · 2.88 MB
  - · Via CompactPCI J4/J5

Miscellaneous
- Battery-backed real-time clock
- External user-definable watchdog
- Integrated hardware monitor
  - · Alarm function
  - · Supervises temperature, all voltages including back-up battery, and power supply (via CompactPCI)
- Reset button at front panel
  - · Can be disabled through software
- LEDs at front panel: IDE, LAN, Power, user-definable
- Power supply controlled by CPU: software-controlled power down

Electrical Specifications
- Supply voltage/power consumption:
  - · +5V (4.85V..5.25V), 1.66A (Tillamook/266MHz)
  - · +3.3V (3.0V..3.6V), 0.83A (Tillamook/266MHz)
  - · +12V (11.4V..12.6V); -12V (-11.4V..-12.6V) (power consumption determined by PC-MIPs used)
- MTBF: 66,200h @ 50°C

Mechanical Specifications
- Dimensions: conforming to CompactPCI specification for 6U boards
- CompactPCI slots:
  - · 4HP total for processors < 8W power dissipation
  - · 8HP for processors > 8W power dissipation
  - · Only 4HP on CompactPCI backplane
- Weight: 530g

Environmental Specifications
- Temperature range (operation):
  - · 0..+45°C (K6-III+/450) or 0..+60°C (Pentium MMX/266)
  - · Industrial temperature range on request
  - · Airflow: min. 10m³/h
- Temperature range (storage): -40..+85°C
- Relative humidity range (operation): max. 95% non-condensing

men
mikro elektronik
gmbh · nürnberg

Embedded Solutions

Technical Data

- Relative humidity range (storage): max. 95% non-condensing
- Altitude: -300m to + 3,000m
- Shock: 15g/0.33ms, 6g/6ms
- Vibration: 1g/5..2,000Hz

Safety
- PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers

EMC
- Tested according to EN 55022 / 1999-05 (radio disturbance) and EN 55024 / 1999-05 (immunity) with regard to CE conformity
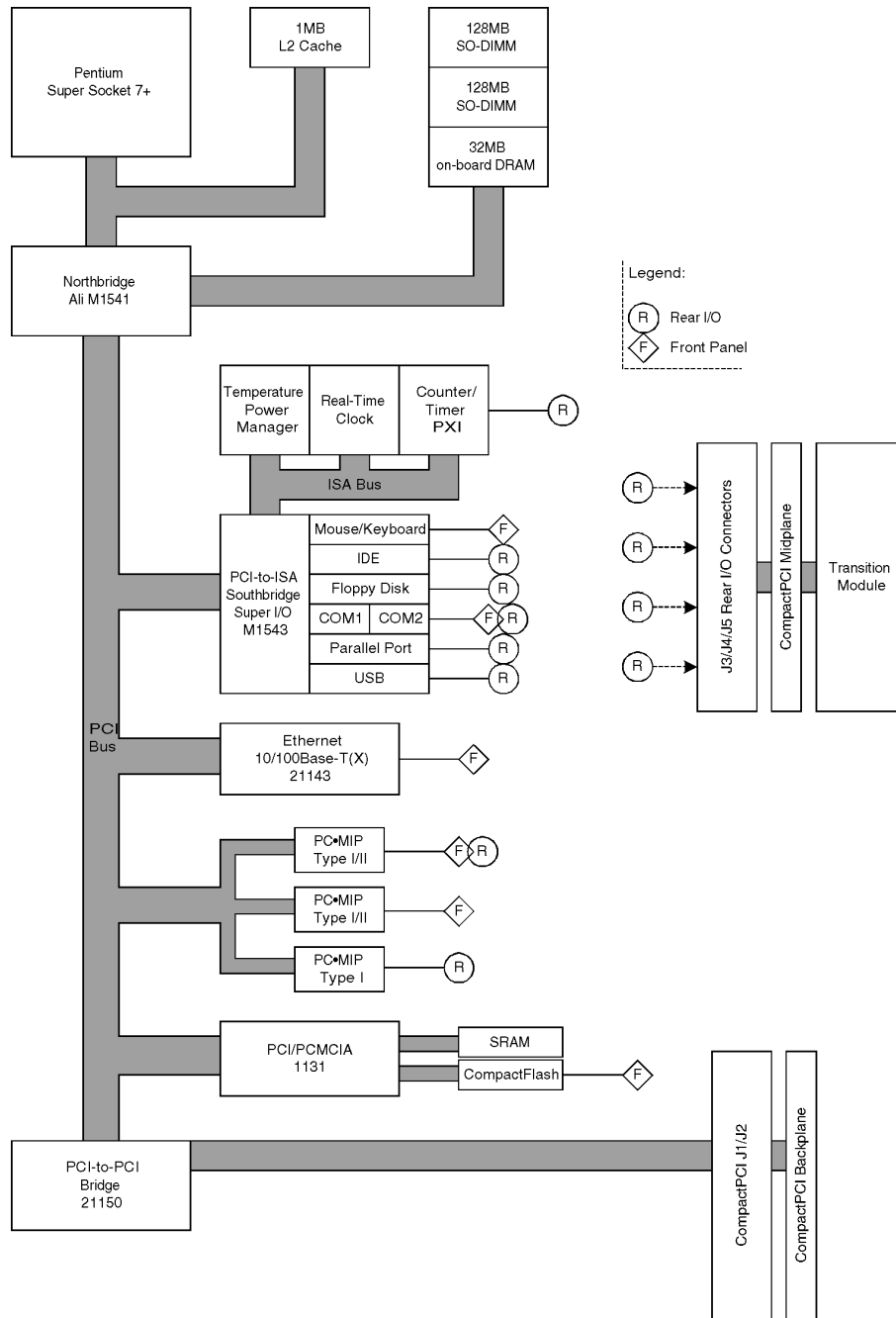
BIOS
- Plug and Play Award BIOS for industrial applications
- CMOS back-up: configuration data stored in EEPROM
- Boot support for CompactFlash interface (DOS, VxWorks)
- Console redirection: serial console administration via terminal (VT100; DOS, VxWorks)

Software Support
- Windows NT, Windows 2000/XP
- VxWorks
- Linux (on request)
- QNX (on request)
- RTX (on request)

men

mikro elektronik
gmbh · nürnberg

Diagram

Embedded Solutions

men
mikro elektronik
gmbh · nürnberg

Related Products

Standard Hardware

02D002-00	D2, CompactPCI 6U, single-board computer, Pentium MMX/266MHz, 1MB Cache, 1MB SRAM, 32MB DRAM, 100Mbit Ethernet, 3 PC-MIP slots, 1-slot front panel
02D002-03	D2, CompactPCI 6U, single-board computer, K6-III+/450, 1MB cache, 32MB DRAM, 100Mbit Ethernet, 3 PC-MIP slots, temperature range 0..+45°C

Please refer to our 6U CompactPCI compare chart for a selection of further single-board computers with different processors and on-board functionality.

Systems & Card Cages

Disk drives for basic systems are delivered as requested. Different rack sizes, power supplies and backplanes on request.

0701-0004	CompactPCI 19" 3U rack-mount enclosure, 5-slot 6U CompactPCI midplane, ATX power supply, fan, 2 batteries; obsolete as of October 13, 2004
0701-0010	CompactPCI 19" 7U/84HP rack-mount enclosure for 6U cards vertical, 8-slot 6U CompactPCI backplane, system slot left, prepared for rear I/O, space for hard-disk drive, floppy drive, CD-ROM drive, 300W ATX power supply, incl. 1U fan tray

Accessories

05A000-10	Keyboard/mouse Y-cable 0.1m, 6-pin Mini DIN plug to two 6-pin Mini DIN receptacles
0500-0002	Battery M4T28... for Timekeeper M48T86 (spare part)
0751-0006	CompactFlash card, 512MB, Type I, 0..+60°C
0751-0007	CompactFlash card, 512MB, Type I, -40..+85°C
0751-0008	CompactFlash card, 64MB, Type I, 0..+60°C
0751-0009	CompactFlash card, 128MB, Type I, 0..+60°C
0751-0012	CompactFlash card, 256MB, Type I, 0..+60°C
0751-0013	Compact Flash card, 64MB, -40..+85°C
0751-0014	Compact Flash card, 128MB, -40..+85°C
0751-0018	CompactFlash card, 256MB, Type I, -40..+85°C
0752-0068	128MB DRAM 0..+60°C for 02D002-03

mikro elektronik
gmbh · nürnberg

Related Products

Embedded Solutions

0752-0145	256MB DRAM 0..+45°C for 02D002-03
08CT02-00	CompactPCI transition module 6U/80mm, I/O connection for D2 CompactPCI CPU board
08CT02-01	CompactPCI transition module 6U/80mm, I/O connection for D2 CompactPCI CPU board, operation temperature -40°C..+85°C
08SA01-00	Serial interface adapter, RS232, not optically isolated, 0..+60°C
08SA02-00	Serial interface adapter, RS422/485, half duplex, optically isolated, 0..+60°C
08SA02-01	Serial interface adapter, RS422/485, full duplex, optically isolated, 0..+60°C
08SA02-07	Serial interface adapter, RS422/485, full duplex, optically isolated, temperature range: -40..+85°C
08SA03-00	Serial interface adapter, RS232, optically isolated, 0..+60°C
08SA03-01	Serial interface adapter, RS232, optically isolated, -40..+85°C
08SA04-00	Serial interface adapter, TTY, optically isolated, 0..+60°C

For more functions realized with SA adapters, see the listing on MEN's website. You can also view our SA adapter compare chart for a quick overview of different functions. Please contact sales to make sure that these SA adapters can be used in the board configuration you are looking for.

Software

10D002-60	VxWorks V.5.4/Tornado II standard BSP for D2

This MEN board is designed to work in a Microsoft Windows environment. For additional Windows driver packages provided or recommended by MEN please refer to the ordering numbers below.

QNX software for this MEN board is available from QNX (www.qnx.com). For QNX BSP and driver support provided by MEN please refer to the ordering numbers below.

VxWorks software for this MEN board is available from WindRiver Systems. For VxWorks BSP and driver support provided by MEN please refer to the ordering numbers below.

This board is an MEN product running Linux. For Linux BSP and driver support provided by MEN please refer to the ordering numbers below.

13D002-00	WindowsNT driver package for D2 (object and source code, MEN)

To use MDIS4 low-level drivers, you also need one of the MDIS4 system packages available for Windows, Linux, VxWorks, QNX, RTX or OS-9 (MDIS4 = MEN Driver Interface System).

13Z001-06	MDIS4 low-level driver sources for LM78/LM79

men ®

mikro elektronik
gmbh · nürnberg

Embedded Solutions

Related Products

13Z002-06	MDIS4 low-level driver sources for Z8536/watchdog
13Z004-06	MDIS4 low-level driver sources for ALI1543 user LEDs on D2/F2
13Z008-06	MDIS4 low-level driver sources for GPIO lines on D2/F2

Documentation

20CT02-00	CT02 user manual
20D002-00	D2 user manual

For the most up-to-date ordering information and direct links to other data sheets and downloads, see the D2 online data sheet under www.men.de. --> Click here!

Germany	**France**	**UK**	**USA**
MEN Mikro Elektronik GmbH	MEN Mikro Elektronik SA	MEN Micro Ltd	MEN Micro, Inc.
Neuwieder Straße 5-7	18, rue René Cassin	Whitehall, 75 School Lane	PO Box 4160
90411 Nuremberg	ZA de la Châtelaine	Hartford, Northwich	Lago Vista, TX 78645-4160
Phone +49-911-99 33 5-0	74240 Gaillard	Cheshire UK, CW8 1PF	Phone (512) 267-8883
Fax +49-911-99 33 5-901	Phone +33 (0) 450-955-312	Phone +44 (0) 1477-549-185	Fax (512) 267-8803
E-mail info@men.de	Fax +33 (0) 450-955-211	Fax +44 (0) 1477-549-178	E-mail sales@menmicro.com
www.men.de	E-mail info@men-france.fr	E-mail info@menmicro.co.uk	www.menmicro.com
	www.men-france.fr	www.menmicro.co.uk	

m≤n ®

mikro elektronik
gmbh · nürnberg