

D3c - 6U CompactPCI PowerPC SBC with PMCs



- ◆ PowerPC MPC8245 with 603e core
- ◆ 1-slot CompactPCI system slot
- ◆ 512MB DRAM, CompactFlash
- ◆ Graphics via PMC
- ◆ Dual Fast Ethernet
- ◆ 4 COMs, USB, IDE, keyboard/mouse
- ◆ 2 PMC slots

The D3 is a single-board computer for embedded applications based on the Kahlua II PowerPC. It can be used in a CompactPCI system slot or as a stand-alone card.

The D3 comes with the MPC8245 PowerPC with 300MHz clock frequency and a local 32-bit/33-MHz PCI data bus. It is a complete state-of-the-art SBC offering DRAM, Flash and CompactFlash memory, dual Fast Ethernet, 4 COMs, USB, IDE and keyboard/mouse interfaces as well as an optional onboard hard disk.

In addition, the D3c CPU board can be equipped with PMC mezzanine cards. PMCs may particularly be used for intelligent telecom I/O.

The modular combination of I/O functionality on a single-board computer allows to build up tailored control systems which appear as customized solutions based on standard components.

Depending on the kind of I/O requirements, further standard versions of D3 are available for other mezzanine standards.

Technical Data

CPU

- PowerPC
 - MPC8245
 - 300MHz

Memory

- Level 1 Cache integrated in MPC8245
- SO-DIMM slot for up to 512MB SDRAM
- 100MHz memory bus operation
- Flash 2MB
 - 8-bit data bus
- Serial EEPROM 2KB for factory settings
- CompactFlash (TM) card interface for Flash ATA (true IDE) via on-board IDE

Interfaces

- Two 10/100Mbps/s Ethernet channels
 - Intel 82559ER
 - RJ45 at front panel with two LEDs
- One UART RS232 serial interface (COM1)
 - 16-byte send/receive buffer
 - RJ45 at front panel
- One UART (COM2)
 - 16-byte send/receive buffer
 - Physical interface using SA adapter via 10-pin ribbon cable on I/O connector
 - RS232..RS485, isolated or not: for free use in system (e. g. cable to front)
- Two MPC8245 UARTs
 - Accessible via I/O connector
- IDE port for hard disk drives
 - Drive can be connected via ribbon cable or mounted directly on the CPU board using MEN's adapter kit
 - Only one CompactPCI slot needed even with hard disk
- Keyboard/mouse
 - PS/2 compatible
 - External adapters for line drivers required
- USB port
 - External line drivers

Local PCI Bus

- PCI Spec. 2.2 compliant
- 32-bit data bus, 33MHz, 3.3V

CompactPCI Bus

- CompactPCI system slot
 - PICMG Spec. 2.0 R3.0 compliant
 - 32-bit data bus
 - 33MHz
- V(I/O): +3.3V or +5V (Universal Board)
- Concurrent primary and secondary bus operation

- Compact PCI hot-swap support

PXI

- Two trigger lines compliant with PXI Specification

Mezzanine Extensions

- D3a: three PC-MIPs Type I/II on local PCI bus
 - Compliant with PC-MIP specification
- D3b: three M-Modules
 - Compliant with M-Module standard
 - Characteristics: D16, D32, A08, A24, INTA, INTC
- D3c: two PMCs
 - Compliant with PMC standard IEEE P1386

Miscellaneous

- Serial real-time clock with integrated 56-byte NVRAM
- Serial hardware watchdog in supervisory circuit
- Temperature sensor
- Hex switch for user settings
- User LEDs (external)

Electrical Specifications

- Supply voltage/power consumption:
 - +5V (4.85V..5.25V), 1.65 A typ.
 - ±12V for mezzanines only, tbd.
- MTBF: 63,000h @ 50°C

Mechanical Specifications

- Dimensions: standard double Eurocard, 233.3mm x 160mm
- Weight (without mezzanines and accessories):
 - D3a: 318g
 - D3b: 315g
 - D3c: 315g

Environmental Specifications

- Temperature range (operation):
 - 0..+60°C or -40..+85°C
 - Airflow: min. 10m³/h
- Temperature range (storage): -40..+85°C
- Relative humidity (operation): max. 95% non-condensing
- Relative humidity (storage): max. 95% non-condensing
- Altitude: -300m to + 3,000m
- Shock: 15g/11ms
- Bump: 10g/16ms
- Vibration (sinusoidal): 2g/10..150Hz

Safety

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

Technical Data

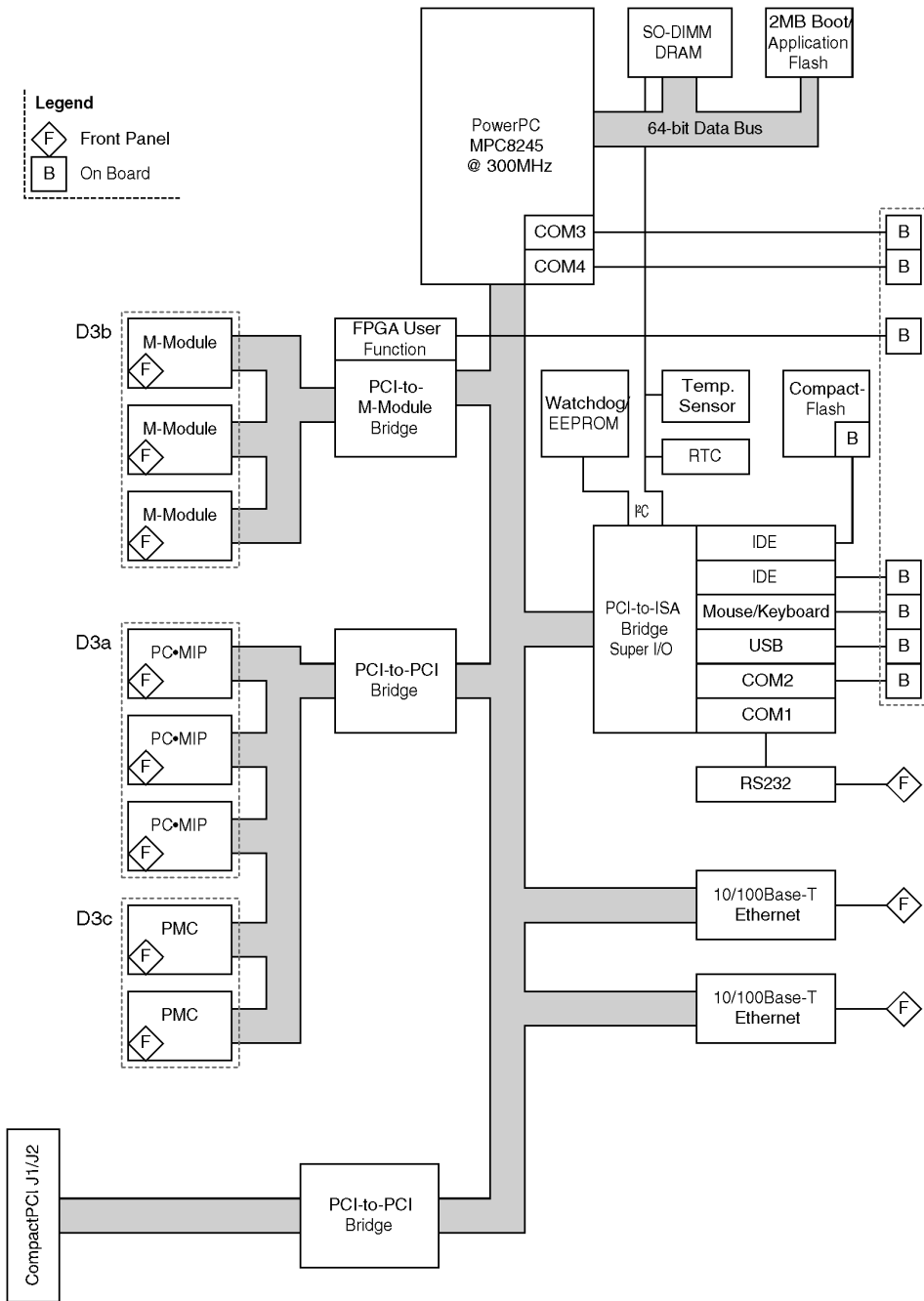
EMC

- Tested according to EN 55022 (radio disturbance), IEC1000-4-2 (ESD) and IEC1000-4-4 (burst) with regard to CE conformity

Software Support

- MENMON
- Linux
- VxWorks
- QNX
- OS-9

Diagram



Related Products

Standard Hardware

02D003A00	D3a, CompactPCI 6U, single-board computer, CPU MPC8245-300MHz, 2MB Flash, 3 PC-MIP slots, 0..+60°C
02D003A01	D3a, CompactPCI 6U, single-board computer, CPU MPC8245-300MHz, 2MB Flash, 3 PC-MIP slots, -40..+85°C
02D003B00	D3b, CompactPCI 6U, single-board computer, CPU MPC8245-300MHz, 2MB Flash, 3 M-Module slots, 0..+60°C
02D003B01	D3b, CompactPCI 6U, single-board computer, CPU MPC8245-300MHz, 2MB Flash, 3 M-Module slots, -40..+85°C
02D003C00	D3c, CompactPCI 6U, single-board computer, CPU MPC8245-300MHz, 2MB Flash, 2 PMC slots, 0..+60°C
02D003C01	D3c, CompactPCI 6U, single-board computer, CPU MPC8245-300MHz, 2MB Flash, 2 PMC slots, -40..+85°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

05AD67-00	IDE mounting kit 44-pin to 44-pin; 50.8 mm; installation kit for Kahlua Box or A12, D3, A15 with AD67, temperature range: -40..+85°C
05A012-00	Hard disk 2.5", 9.5mm adapter for A12, D3, SC13
05A012-01	Mounting kit for 2 SA adapters for A12/A15/D3, incl. 6U 1-slot VME or CompactPCI front panel incl. ribbon cable, without SA adapters
05F006-00	RS232 interface cable 9-pin D-Sub plug to 8-pin RJ45 plug, 2m
05M000-17	25 mounting screw sets to fix M-Modules on carrier boards

Related Products

You can download the data sheet for hard disk 0710-0012 from MEN's website.

0710-0009	IDE hard disk 2.5", 9.5mm, 20GB; for mounting on-board (harddisk mounting kit may be additionally required)
0710-0012	Industrial IDE hard disk 2,5", 40GB, 24 hours/7 days, 0..+60°C; for on-board mounting (hard disk mounting kit may be required additionally)
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
0752-0048	64MB DRAM 0..+60°C for 02D003x00
0752-0049	128MB DRAM 0..+60°C for 02D003x00
0752-0050	256MB DRAM 0..+60°C for 02D003x00
0752-0051	512MB DRAM 0..+60°C for 02D003x00
0752-0132	512MB DRAM -40..+85°C for 02D003x01
08AD67-01	I/O extension 19" 6U 4HP incl. 1 USB connector, 1 keyboard connector, 1 mouse connector; prepared for 3 SA adapters, prepared for HDD 2.5", reset, abort, 0..+60°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

Related Products

10ABMX-20	ElinOS V.3.0 - Embedded Linux incl. RTAI real-time extension for PowerPC, English version. The Sysgo Development Kit includes the board support packages (BSPs) for MEN cards F1N, B11, A12, A15, D3, SC13, F6, EM04/N and PP01. The package includes 1 year ElinOS development support and all ElinOS updates and upgrades during this period for free. It additionally includes the BSP support for MEN hardware by MEN. --- N.B.: For correct handling of the ElinOS software support it is mandatory to sign and return the enclosed support agreement directly to Sysgo! The Sysgo support agreement is automatically prolonged for another year if not cancelled 3 months prior to expiration.
10ABMX-21	ElinOS V.3.0 - Embedded Linux incl. RTAI real-time extension for PowerPC, German version. The Sysgo Development Kit includes the board support packages (BSPs) for MEN cards F1N, B11, A12, D3, SC13, F6, EM04/N and PP01. The package includes 1 year ElinOS development support and all ElinOS updates and upgrades during this period for free. It additionally includes the BSP support for MEN hardware by MEN. --- N.B.: For correct handling of the ElinOS software support it is mandatory to sign and return the enclosed support agreement directly to Sysgo! The Sysgo support agreement is automatically prolonged for another year if not cancelled 3 months prior to expiration.
10F001N01	OS-9(000) V.2.2/3.x: BSP for F1N, B11, A12, D3, SC13, Kahlua Box (object code, MEN)
10F001N02	OS-9(000) V4.2: BSP for F1N, B11, A12, A15, D3, SC13, Kahlua Box (object code, MEN)
10F001N40	QNX 6 BSP for F1N, B11, A12, A15, D3, SC13, Kahlua Box (object code, MEN)
10F001N60	VxWorks V.5.4..5.5 / Tornado 2.0..2.2 BSP for F1N, B11, A12, D3, SC13, Kahlua Box, A15

This board is an MEN product running Sysgo's ElinOS Embedded Linux. Sysgo provides full support for MEN hardware. Please contact www.sysgo.de.

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.

For OS-9 BSP and driver support provided by MEN please refer to the ordering numbers below.

XiBase9, a graphical user interface for Linux and OS-9 from XiSys, is running on the MEN graphics controller PC-MIP and PMC modules P1, P17 and P517 in combination with the PowerPC-based Single-Board Computers A11, A12, D3, F1N, B11 and SC13 (further SBCs on request). For more information, purchase and support please apply to www.xisys.de.

Related Products

14A012-00	MENMON (Firmware) for A12, D3, SC13 (object code)
-----------	---

You can download the data sheet for the MENMON firmware for PowerPC platforms from MEN's website.

Documentation

20D003-00	D3 user manual
-----------	----------------

21APPN003	Application Note: Using P1/P501 Graphics on MEN 824x/ALI boards under ELinOS
-----------	--

For the most up-to-date ordering information and direct links to other data sheets and downloads, see the D3c online data sheet under www.men.de. --> [Click here!](#)

Germany

MEN Mikro Elektronik GmbH
Neuwieder Straße 5-7
90411 Nuremberg
Phone +49-911-99 33 5-0
Fax +49-911-99 33 5-901
E-mail info@men.de
www.men.de

France

MEN Mikro Elektronik SA
18, rue René Cassin
ZA de la Châtelaine
74240 Gaillard
Phone +33 (0) 450-955-312
Fax +33 (0) 450-955-211
E-mail info@men-france.fr
www.men-france.fr

UK

MEN Micro Ltd
Whitehall, 75 School Lane
Hartford, Northwich
Cheshire UK, CW8 1PF
Phone +44 (0) 1477-549-185
Fax +44 (0) 1477-549-178
E-mail info@menmicro.co.uk
www.menmicro.co.uk

USA

MEN Micro, Inc.
PO Box 4160
Lago Vista, TX 78645-4160
Phone (512) 267-8883
Fax (512) 267-8803
E-mail sales@menmicro.com
www.menmicro.com

The date of issue stated in this data sheet refers to the Technical Data only. Changes in ordering information given herein do not affect the date of issue.

All brand or product names are trademarks or registered trademarks of their respective holders.

Information in this document has been carefully checked and is believed to be accurate as of the date of publication; however, no responsibility is assumed for inaccuracies. MEN Mikro Elektronik accepts no liability for consequential or incidental damages arising from the use of its products and reserves the right to make changes on the products herein without notice to improve reliability, function or design. MEN Mikro Elektronik does not assume any liability arising out of the application or use of the products described in this document.

The products of MEN Mikro Elektronik are not suited for use in nuclear reactors and for application in medical appliances used for therapeutical purposes.

Application of MEN's products in such plants is only possible after the user has precisely specified the operation environment and after MEN Mikro Elektronik has consequently adapted and released the product.

Copyright © 2004 MEN Mikro Elektronik GmbH. All rights reserved.