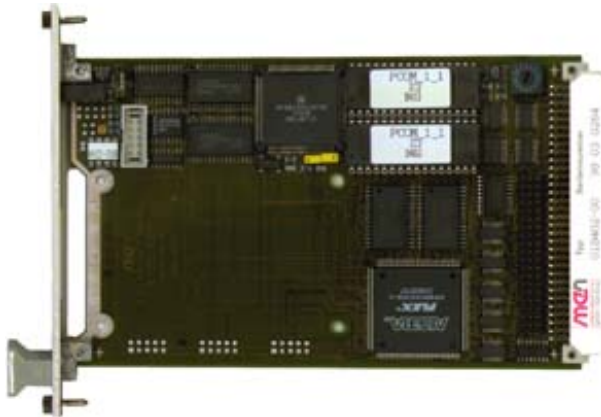# *B402 - 3U VMEbus Intelligent I/O Controller*

Embedded Solutions

- **MC68332/20MHz**
- **1-slot VME master/slave or busless**
- **1 M-Module slot**

The B402 CPU board is a universal intelligent VMEbus master and/or slave. Being equipped with sufficient local EPROM/Flash, SRAM, RTC etc., the 32-bit CPU (MC68332) handles one local M-Module.

The B402 makes use of the 16 TPU channels ("Time Processing Units") of the RISC CPU inside the 68332. The TPU channels provide user-defined intelligent timer functions, for example for signal analysis. All TPU lines for the on-board M-Module are available as TTL signals on row C of the M-Module I/O connector. The B402 can access the VMEbus as an A24/A16/D16

master, and it can also perform slot-1 function. As a slave, the board has 2MB of genuine dual-ported RAM. Due to its bus architecture and I/O modularity the B402 is suited for a myriad of applications. Together with an M-Module it can be used as a controlling computer or can fulfill I/O tasks in a VMEbus multimaster system.

Its genuine dual-ported RAM makes the B402 also an ideal choice for use as an intelligent data acquisition system or for handling local I/O tasks.

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Technical Data

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Microcontroller
- 32-bit CPU MC68332/20MHz

Memory
- Up to 1MB "genuine" dual-ported SRAM
- Up to 2MB EPROM (two 32-pin JEDEC sockets, also for EEPROMs or NOVRAMs)
- Up to 1MB SRAM, battery backup possible via VMEbus

M-Module Extension
- 1 M-Module slot
- Characteristics: A08, D08, D16, INTA, INTC, TRIGI, TRIGO
- User-defined row of 60-pin connector

Interfaces
- Serial interface via interface adapters (optional)

VMEbus
- 3U VMEbus form factor
- A16, A24, D16
- Single-level bus arbiter/RWD-ROR bus requester
- Single-level interrupt handler/requester
- Single-level location monitor
- DTB master/slave
- Bus timer

Miscellaneous
- Programmable hardware watchdog
- Battery-backed real-time clock
- Eight user-programmable LEDs
- One user-readable rotary coding switch
- Single 5V power supply (except M-Module)

Electrical Specifications
- Isolation voltage: 500V DC
- Supply voltage/power consumption: +5V (4.85V..5.25V), 1A typ.
- MTBF: 38,000h @ 50°C

Mechanical Specifications
- Dimensions: single Eurocard (100mm x 160mm)
- Weight: 140g

Environmental Specifications
- Temperature range (operation):
- □ 0..+60°C
- □ Industrial temperature range on request
- □ Airflow: min. 10m³/h
- Temperature range (storage): -40..+85°C
- Relative humidity range (operation): max. 95% non-condensing
- 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
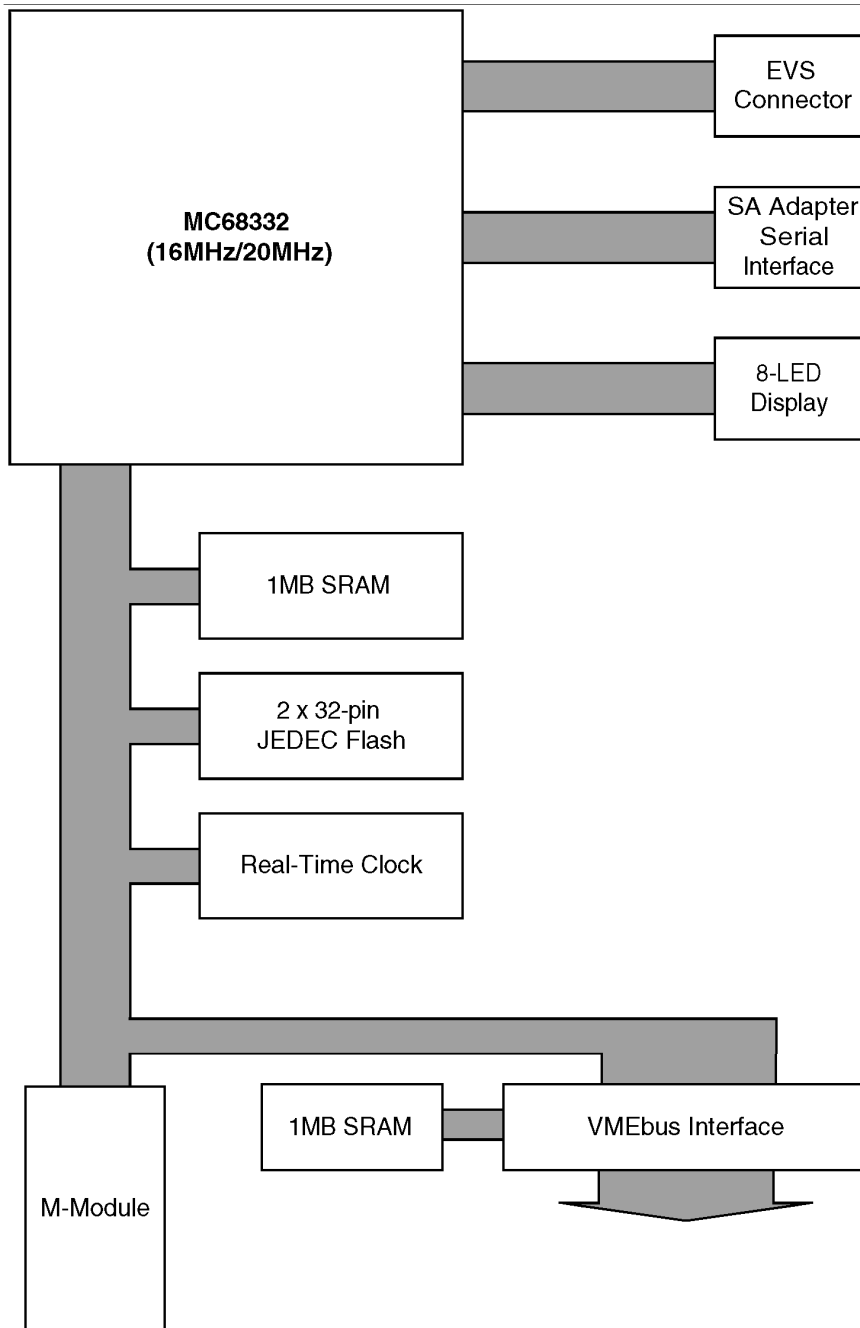
EMC
- Tested according to EN 55022 / 1999-05 (radio disturbance) and EN 55024 / 1999-05 (immunity) with regard to CE conformity

Software Support
- MENMON
- OS-9

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Diagram

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MC68332
(16MHz/20MHz)
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- EVS Connector
- SA Adapter Serial Interface
- 8-LED Display
- 1MB SRAM
- 2 x 32-pin JEDEC Flash
- Real-Time Clock
- M-Module
- 1MB SRAM
- VMEbus Interface

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Related Products

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Standard Hardware

01B402-02	B402, VMEbus 3U, CPU 68332/20 MHz, 256KB global dual-ported SRAM, 1MB local SRAM, 1MB Flash, 1 M-Module slot

Systems & Card Cages

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

0700-0009	CE-conformal housing for VMEbus 3U: closed 19" rack, 4U, 9 slots, J1 backplane, power supply 230V, fan

Accessories

05B402-00	Accessory B402: 1-slot front panel with flat cable for use of serial interface adapters
05M000-15	Front-panel cover for M-Module cut-outs at front panels, snap-in, 10 pcs
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

10ABMX-07	OS-9 V.3.0: OS-9/68k + NET license
10B402-01	OS-9 V.3.0: BSP for B402 (object code, PC disk format, MEN)

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

Documentation

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Related Products

20B402-00	B402 user manual

For the most up-to-date ordering information and direct links to other data sheets and downloads, see the B402 online data sheet under www.men.de. --> Click here!

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