B6 - 3U VMEbus 68k
Communication Controller

Embedded Solutions

- **MC68360/33**
- **1-slot VME master/slave or busless**
- **4MB DRAM, 4MB Flash, 4MB SRAM**
- **6 serial lines**
- **Bitbus support**
- **1 M-Module slot**

The B6 is a cost-optimized single-board CPU board for embedded communication-intensive applications. The board features an MC68360, which supports all kins of serial protocols including Ethernet, Bitbus, UART etc. This 68020-compatible 32-bit CISC processor is well equipped with 4MB SRAM, 4MB DRAM and 4MB Flash. Independent of the CISC processor a RISC processor is available for communication tasks. It can serve up to six serial interfaces with 12 DMA channels. The line drivers of the serial interfaces are not fixed by the board. Two serial interfaces are connected directly on the CPU, another four via ribbon cable. They can be adapted to RS232/485 as well as Bitbus and Ethernet. An M-Module slot is provided for local extensions. It needs a second slot on the VMEbus. A mounting kit is available.

Full multimaster-capability as well as automatic slot-1 functionality make the B6 an interesting choice for many VMEbus applications.

The B6 was designed to be extremely cost-effective. It is also available for harsh environmental requirements.

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Technical Data

CPU
- MC68360/33MHz
- 32 bits

VMEbus
- 3U VMEbus form factor
- VMEbus master interface
- Interrupter/interrupt handler
- A16, A24, D16
- VMEbus slot-1 functionality

Memory
- 512KB boot Flash
- 16-bit data bus
- Up to 4MB SRAM
- Battery-backed via VMEbus
- 32-bit data bus
- Up to 4MB DRAM on board
- 32-bit data bus
- Burst access
- Up to 4MB Flash
- 32-bit data bus
- Onboard programming
- Burst access

Serial Interface Adapter Interfaces
- 2 SMC UARTs
- For two external serial SA adapters
- Connection via 10-pin ribbon-cable connectors
- 2 SCC intelligent serial interfaces
- For two serial SA adapters
- Directly plugged on the board via 10-pin connector
- Additional Bitbus baud rate
- 2 SCC intelligent serial interfaces
- For two external serial SA adapters
- Connection via 10-pin ribbon-cable connectors
- Physical interface using adapter
- RS232, RS422, RS485, TTY or Bitbus
- Optically isolated or not

M-Module Extension
- 1 MA-Module slot (requires additional VMEbus slot and front panel)
- Characteristics: A08, A20, D16, INTA

Miscellaneous
- Battery-backed real-time clock
- Programmable watchdog
- Serial EEPROM (4Kbit) for setup
- Two hex switches
- Four programmable LEDs
- Reset button and abort button
- Single 5V supply (12V for M-Modules if installed)

Electrical Specifications
- Supply voltage/power consumption: +5V (4.85V..5.25V), 600mA typ.
- MTBF: 45,000h @ 50°C

Mechanical Specifications
- Dimensions: standard single Eurocard, 100mm x 160mm
- Weight: 150g

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:
- 1..10Hz @ a=25/f
- 10..100Hz @ a=250/f

Safety
- PCB manufactured with a flammability rating of 94V-0 by UL recognized manufacturers
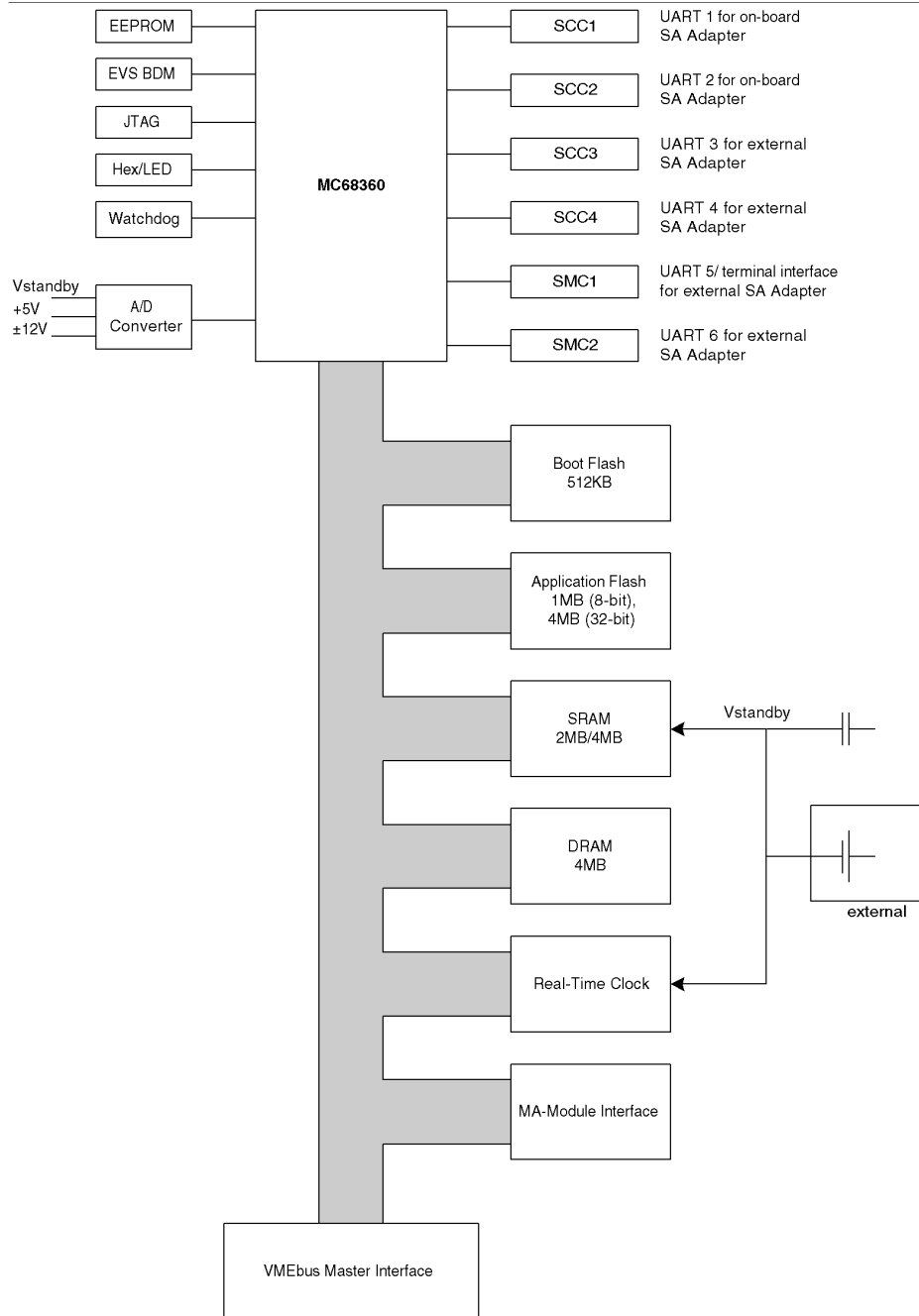
EMC
- Tested according to EN 55022 / 1999-05 (radio disturbance) and EN 55024 / 1999-05 (immunity) with regard to CE conformity

Software Support
- MENMON
- OS-9

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Diagram

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EEPROM

EVS BDM

JTAG

Hex/LED

Watchdog

Vstandby
+5V
±12V

A/D Converter

MC68360

SCC1 — UART 1 for on-board SA Adapter

SCC2 — UART 2 for on-board SA Adapter

SCC3 — UART 3 for external SA Adapter

SCC4 — UART 4 for external SA Adapter

SMC1 — UART 5/ terminal interface for external SA Adapter

SMC2 — UART 6 for external SA Adapter

Boot Flash 512KB

Application Flash 1MB (8-bit), 4MB (32-bit)

SRAM 2MB/4MB — Vstandby

DRAM 4MB — external

Real-Time Clock

MA-Module Interface

VMEbus Master Interface

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Related Products

Standard Hardware

01B006-00	B6, 1-slot VME 3U, single-board computer, CPU 68360/33MHz, 4MB DRAM, 4MB SRAM, 4MB Flash, 0.5MB boot Flash, 2 SA adapter slots, without SA adapters

Please refer to our 3U VMEbus 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.

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

Accessories

05B005-00	Accessory kit for B5: 1-slot front panel, M-Module mounting kit, cover plates for M-Module and SA adapter
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
08SA06-01	Serial interface adapter, RS485/Bitbus interface, optically isolated, 0..+60°C
08SA07-00	Serial interface adapter, Ethernet 10Base-T, 9-pin D-Sub connector, electrically isolated, 0..+60°C
08SA10-00	Serial interface adapter, fiber optic Ethernet 10Base-FL, serial UART full duplex, 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

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Related Products

10ABMX-07	OS-9 V.3.0: OS-9/68k + NET license
10B006-01	OS-9 V.3.0.3: BSP for B6 incl. Bit Bus driver (object code, floppy disks, MEN)

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

Documentation

20B006-00	B6 user manual

For the most up-to-date ordering information and direct links to other data sheets and downloads, see the B6 online data sheet under www.men.de. --> Click here!

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