



68000 Micro-Module

The Low Cost Micro-Controller for
Quick Turn Round Projects

Features

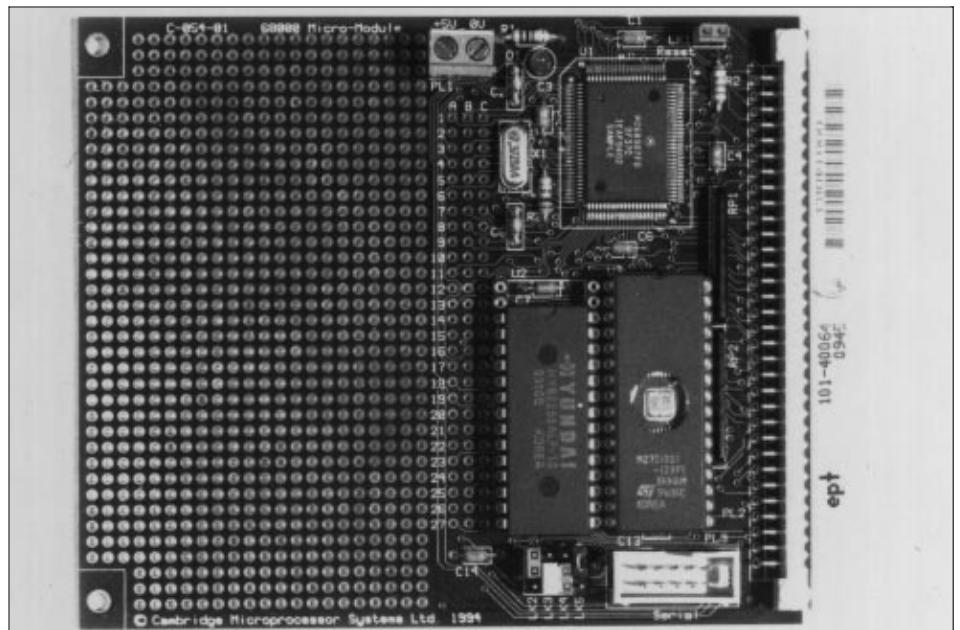
- ❑ 68000 32 bit Compatible CPU
- ❑ 7.3728 MHz Clock speed
- ❑ Upto 1 M-bytes EPROM Space
- ❑ Upto 512 K-bytes Static RAM
- ❑ 32 K-bytes SRAM Fitted
- ❑ RS-232 Serial Port (RS485 option)
- ❑ Two 16-bit Timer Counters
- ❑ Up to 22 Digital I/O Lines
- ❑ 8051 Peripheral Expansion
- ❑ 68000 Expansion Bus
- ❑ I²C or M-Bus Expansion Port
- ❑ Compatible with the Module Range of Products
- ❑ Small Size 100 x 118 x 12 mm
- ❑ Low power CMOS design
- ❑ Power Saving stand-by mode
- ❑ Large Proto-typing area
- ❑ Very Low Cost
- ❑ Software support for MINOS
- ❑ C or Modula-2
- ❑ Custom Design and Manufacture

Description

The 68000 Micro-Module is a small 32/16 bit micro-controller board. It consists of a 68000 compatible CPU, an RS-232 serial port, two 16 bit timer/counters and up to 22 bit digital I/O lines. The board also has a large proto-typing area for your own application. All this fits onto a board 100 x 118 mm. It is very competitively priced at below £100 for one off quantities.

The board on its own, or with other extensions, is capable of outstanding performance for the price. The serial port can operate using baud rates between 75 and 38400 baud on both the receiver and transmitter. It is buffered with RS-232 transceivers and the connector is compatible for connection to a standard P.C. 9-pin serial port. There is an option of fitting the serial port with a RS-485 network buffer if required. If the serial port is not required the TXD and RTS pins can be used as two general purpose digital I/O lines.

The large proto-typing area is provided to allow the customer to add their own circuitry. The address, data and other useful lines are taken to a connector at the edge of the proto-typing area for easy connection.



This makes the board ideal for one-off jobs. But do not worry if you want larger quantities, as for quantities greater than 10 off we can track your circuit onto the board and then build it for you. This gives our customers a very low cost route through to custom designed boards.

The board features eight dedicated digital I/O lines. Each of these lines can be used to generate an interrupt of any level if required. Further digital I/O lines may become available if the alternative function of the CPU pin is not required.

There are four chip selects that can be configured to appear at any location in the memory map. These chip selects decode an area of 16K-bytes and so they are ideal for adding extra peripherals to the board. These chip select lines are available to be used as general purpose digital I/O lines if they are not required for decoding. They are available for easy access to the proto-typing area.

The board features two 16-bit timer/counters. These are cascadable if required. Each of the timer/counters has an input which can either be a clock source or a trigger to the timer value capture logic. Also each timer/counter has an output pin which can be programmed to either toggle or pulse when the relevant timer reaches a reference value. If the timer functions are not required these four signals can be used as general purpose digital I/O lines.

The I²C bus is supported on the Expansion Bus connector or on the proto-typing area if required. This is a serial interface bus

which enables many types of peripherals to be connected to the processor with just two wires. The Micro-Module can operate either as a master or as a slave on the I²C bus. If the I²C bus is not required the two signals can be used as open drain inputs or outputs.

The 8051 expansion bus is available on the Expansion Bus connector or on the proto-typing area if it is required. The bus has a dedicated chip select output which can be located in different areas of the memory map. When an access is made to the 8051 area, the lower eight address lines and the 8-bit data bus are multiplexed together. To decode this a strobe signal is generated to latch the addresses before the data is generated.

Software support for the Micro-Module is available for CMS's own MINOS Real Time operating system. MINOS is licensed on a royalty FREE basis providing the user with unlimited copies of target software free of all charges. Programming packages available include Crossware C, or CMS's own Modula-2. Alternatively 68000 assembler code can be developed on a P.C. and either downloaded or blown into the EPROM on the Micro-Module.

The Expansion Bus connector gives access to the wide range of peripheral boards in the Module range including analogue I/O, digital I/O, serial I/O, SCSI I/O, P.C. compatible video and memory expansions.

A range of designer kits are available which enable the user to add extra features to this product using the proto-typing area. These

kits include a circuit diagram, an operating system driver and associated library code, build instructions and some example software to get the user up and running with their own configuration of I/O. The range of I/O facilities covered includes I²C bus I/O, Printer I/O, extra serial ports, extra digital lines, analogue I/O, keypad ports and both graphic and alphanumeric liquid crystal displays.

Specification

Processor

68000 Compatible
7.3728 MHz clock speed
14.7456 MHz option

Memory

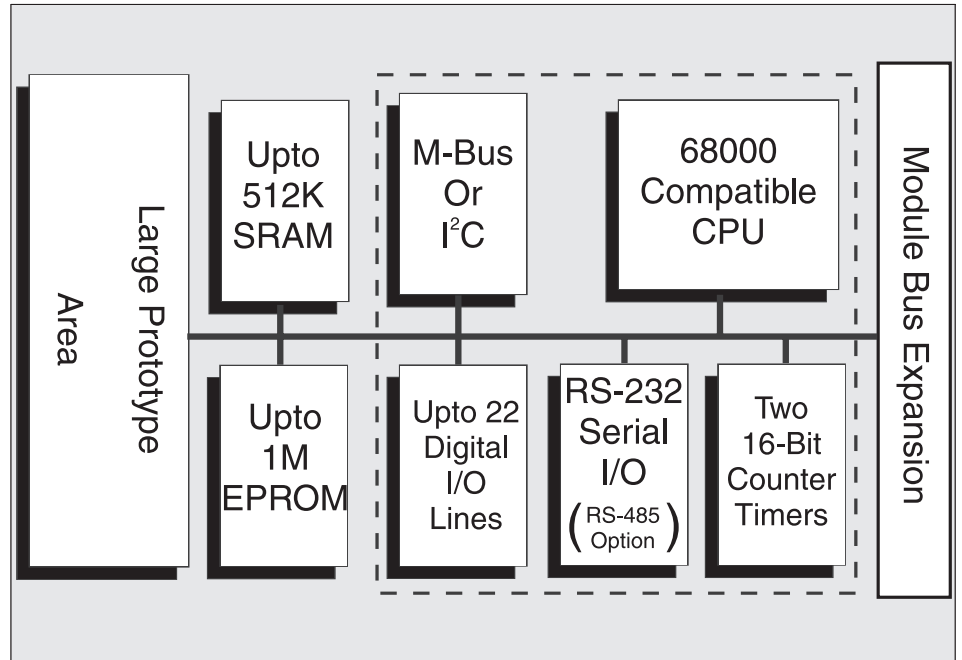
Up to 1 M-byte EPROM
Up to 512 K-byte static RAM

Serial Port

RS-232 buffered
Optional RS-485 network port
75 to 38400 Baud
Separate Receiver and Transmitter baud rates

Digital I/O

8 dedicated digital I/O lines



Up to 22 digital I/O lines

Timer Counters

2 independent 16-bit timer/counters

Proto-typing area

Easy connection to:
address and data bus

68000 bus

8051 bus

I²C or M-Bus bus

Up to 5 Chip select lines

Local Expansion Bus

Full 68000 bus interface

Memory mapped 8051 bus interface

I²C peripheral expansion bus

Size

100 x 118 mm x 15 mm

Power Consumption

5 Volt only operation

typ. less than 60 mA full power

typ. less than 30 mA low power

Temperature range

0 to 70 degC

Order Codes

K-030[Option]	Micro-Module 32 K-byte SRAM fitted
H-030	Micro-Module C Development Pack + Multi Minos License
J-030	Micro-Module Modula-2 Development Pack + Multi Minos License

Options

N	RS-485 Network version
D	14.7456 MHz version
L	128 K-byte SRAM fitted
S	Single Minos License version

Related Products

K-038	Micro-Midget
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Designer Kits - Please contact CMS for details

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