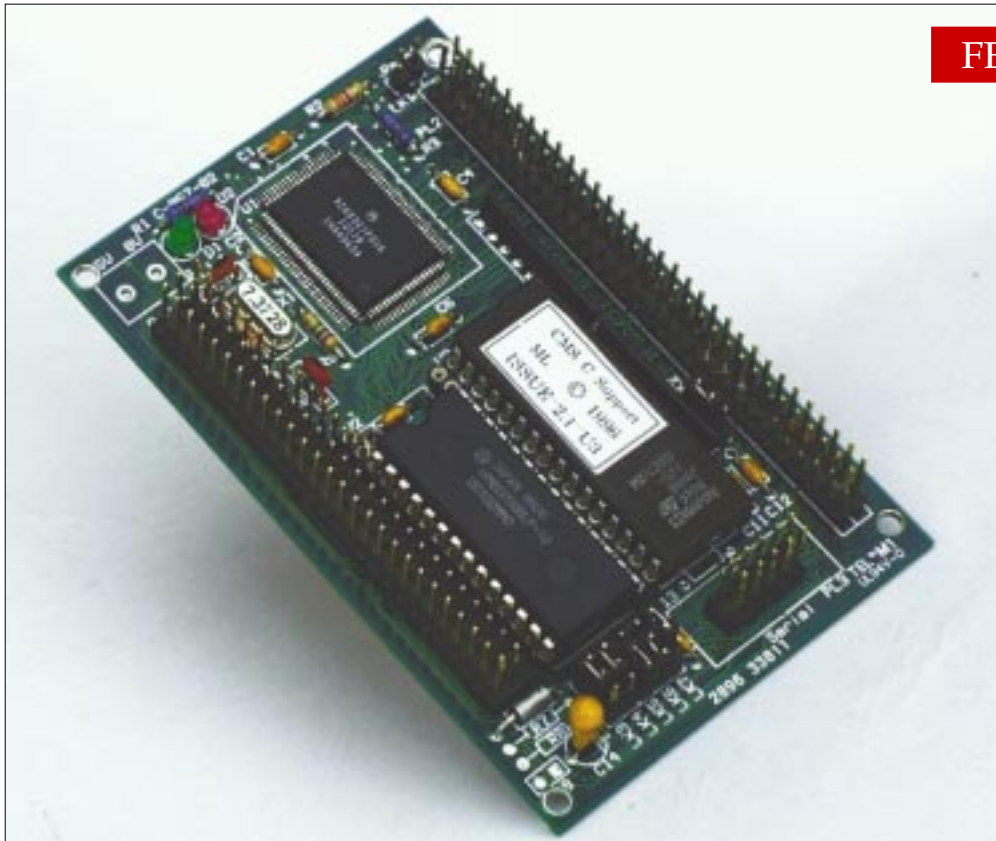


THE LOW COST MICRO-CONTROLLER FOR INTEL-LIGENT TARGET APPLICATIONS

68000 *Micro-MIDGET*

1 RS-232
16 Digital
I²C Bus



The picture shows a K-038LS

FEATURES

- 68000 32 bit Compatible CPU
- 7.3728 MHz Clock speed
- Upto 1 M-byte EPROM Space
- Up to 512 K-bytes Static RAM
- 32 K-bytes SRAM Fitted
- RS-232 Serial Port (RS-485 option)
- Two 16-bit Timer Counters
- Up to 22 Digital I/O Lines
- 8051 Peripheral Expansion bus
- 68000 Expansion Bus
- PC or M-Bus Expansion Port
- 100% Code Compatible with the Micro-Module
- Small Size 100 x 64 x 17 mm
- Low power CMOS design
- Power Saving stand-by mode
- Very Low Cost
- Software support for Minos, C or Modula-2
- Custom Design and Manufacture

DESCRIPTION

The 68307 based Micro-Midget 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 digital I/O lines. All this fits onto a board 100 x 64 mm. It is very competitively priced at £65 in quantity.

The board 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.

FAST DEVELOPMENT

The Micro-Midget is designed to plug into a mother board which contains the user interface circuitry. These user circuits are extremely easy to interface with the Micro-Midget. Full software support is provided for many standard parts. This provides the fastest development routes for custom design saving months of work.

The Micro-Midget expansion bus consists of 154 gold pins. These pins give access to all the CPU signals including address, data, 68000 control lines, 8051 control lines, PC or all the digital I/O lines. The

serial port can be accessed either at TTL levels or RS-232/RS-485 levels.

The board features sixteen dedicated digital I/O lines. Each of these lines can be used to generate an interrupt of any level if required. Three other digital I/O lines are available in most applications but these do not have interrupt capability. Further digital I/O lines may become available if the alternative function of the CPU pin is not required.

There are five 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.

The board features two 16-bit timer/counters. These are cascadable if re-

quired. 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 Micro-Midget expansion bus. This is a serial interface bus which enables many types of peripherals to be connected to the processor with just two wires. The Micro-Midget 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.

68000 MICRO-MIDGET

The 8051 expansion bus is available for easy connection on the Micro-Midget expansion bus 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.

FULL P.C. DEVELOPMENT

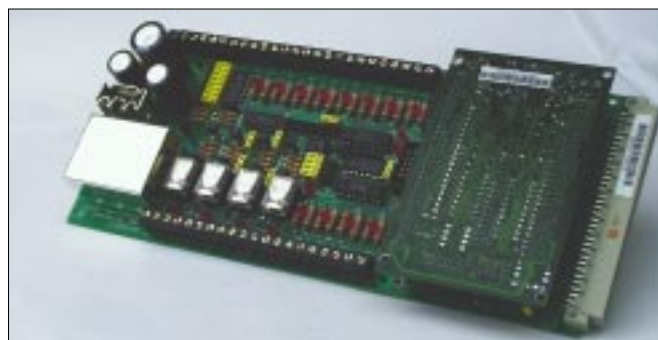
Software support for the Micro-Midget is available for C.M.S.'s own Minos Real Time operating system. Minos is licensed on a royalty FREE basis providing the user with unlimited copies of target software free of all charges. Programming packages available include Crossware C or C.M.S.'s own Modula-2.

Once the application hardware has been determined it is very easy to use Micro-Midget with a mother board containing your application hardware. The Micro-

Midget is a multi layer board to keep noise to a minimum and to allow all the wires to be routed, but most application interfaces are relatively simple and can be routed on single or double sided PCBs. Cambridge Microprocessor Systems Ltd. has a fully equipped design office with CAD machines for designing and laying out printed circuit boards. We also have a production facility in which we can manufacture your product to your specification. Please contact us if you require custom design or manufacture of target cards.

BENEFITS

- Easy to Use
- Very Fast Development
- CPU Engine module
- Low Cost of applications
- Rapid time to market
- Simple to change CPU



ORDER CODES

Order Number	Product Name	1 off	100 off
K-038(Option[s])	Micro-Midget	£95	£65
<i>Select options from option list below</i>			
Options	Option feature		
N	RS-485 Network	Free	Free
D	14.7456 MHz	£10	Free
L	128 K-byte RAM fitted	£10	£5
S	Single Minos License version	£30	Free
H-039	Micro-Midget C Starter Pack	£295	
<i>Single Copy Minos License C programming package (including K-038LS)</i>			
J-039	Micro-Midget Modula-2 Starter Pack	£195	
<i>Single Copy Minos License Modula-2 programming package (including K-038LS)</i>			
H-038	Micro-Midget C Development Pack	£595	
<i>Multi Copy Minos License C programming package (including K-038L)</i>			
J-038	Micro-Midget Modula-2 Development Pack	£495	
<i>Multi Copy Minos License Modula-2 programming package (including K-038L)</i>			

RELATED PRODUCTS

K-030	Micro-Module 32 K-byte RAM	£95	£65
<i>RS-232, 32 K-byte SRAM fitted and proto-type area</i>			
K-020	Alphanumeric LCD & Keypad Interface	£45	£29

MIDGET 980629



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SPECIFICATION

Processor 68307 Motorola CPU, 7.3728 MHz clock speed.

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 16 dedicated digital I/O lines, Up to 22 digital I/O lines available.

Timer Counters 2 independent 16-bit timer/counters .

Expansion Bus 68000 address, data and control bus, 8051 address, data and control bus I²C or M-Bus bus, Up to 5 Chip select lines, Digital I/O lines, Serial port, Counter/Timers .

Size Small dimensions 100 x 64 x 17 mm

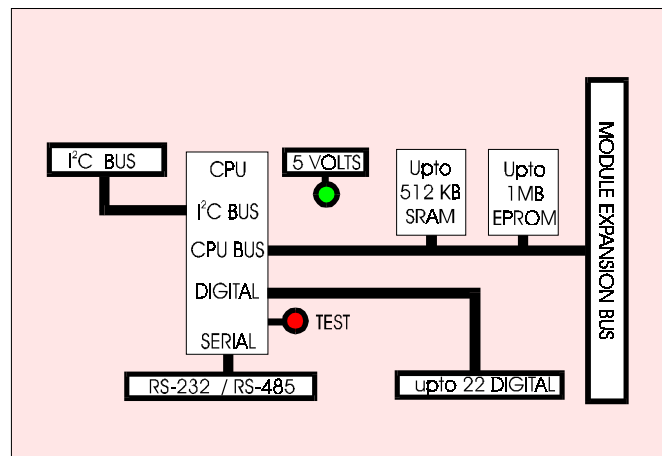
Power 5 Volt only operation, 60 mA full power, 30 mA in low power mode.

Environmental Operating temperature range 0 to 70 degC Relative Humidity 0 to 90% (non condensing).

SUBJECT TO CHANGE WITHOUT NOTICE

The picture opposite shows the Digital Signal Conditioning board which the micro Midget plugged into the board.

This is an easy and quick way to develop your new products



The picture shows the block diagram of the K-030



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