

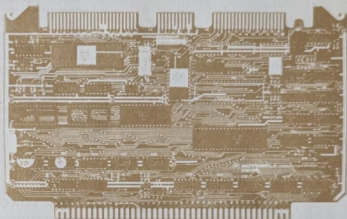
**MOTOROLA****MICROSYSTEMS**

M68MM01B1A

Monoboard

Microcomputer Module

- Complete microcomputer on a single board
- MC6802 microprocessing unit with 128 bytes of chip static RAM
- On-board crystal controlled clock
- Sockets for up to 4K of erasable/programmable ROM
- 256 bytes of Read/Write static RAM
- Power-on reset
- 20 programmable I/O lines (MC6821 PIA)
- Three 16-bit binary programmable timers (MC6840 PTM)
- Serial I/O interface with RS-232C drivers/receivers and software programmable baud rate (110, 300, 1200, or 2400)
- Audio tape cassette interface circuitry
- Dynamic RAM refresh logic
- Buffered Address, Control, and Data Busses
- Full compatibility with MC6800 software, with micromodule family of parts, and with Motorola EXORciser



Monoboard Microcomputer 1B1A provides the user with a stand-alone microcomputer that has all the processing and control power of an MC6802 MPU with its self-contained clock circuit and 128 bytes of static RAM. The module contains sockets for up to 4K of EROM or ROM for programming, a Peripheral Interface Adapter (PIA) for parallel data transfers, and a Programmable Timer Module (PTM) which provides for such tasks as frequency measurements, event counting, interval measuring, square wave generation, gated delay signals, single pulses of controlled duration, pulse width modulation, and timed system interrupts. The module incorporates the necessary crystal clock circuits, the reset timer for power-on initialization, and address bus decoding for establishing the address of each part.

In addition to these features, the module has an additional 256 bytes of static RAM, provisions for off-board dynamic memory refresh, an Asynchronous Communications Interface Adapter (ACIA) with RS-232C interface circuits, and an audio tape cassette interface circuit.

The Micromodule 1B1A address bus is used to select each of the memory locations within a micro-module system. Micromodule 1B1A uses a partially decoded addressing scheme to uniquely address each on-board EROM/ROM, RAM, PIA, ACIA, and PTM. The address bus interface consists of three-state buffers.

The Micromodule 1B1A data bus is used to perform data transfers between the MPU and various devices (EROM/ROM, RAM, PIA, ACIA, and PTM). For greater memory and I/O capability, additional devices can be added external to the Monoboard.

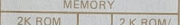
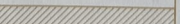
Monoboard Microcomputer 1B1A is also bus compatible with the M6800 EXORciser. This versatility provides the user with the means to develop and debug both his hardware and software, and to troubleshoot production hardware. Thus, the user can take advantage of the EXORciser's optional debug, memory, and I/O modules.

EXORciser is a trademark of Motorola.

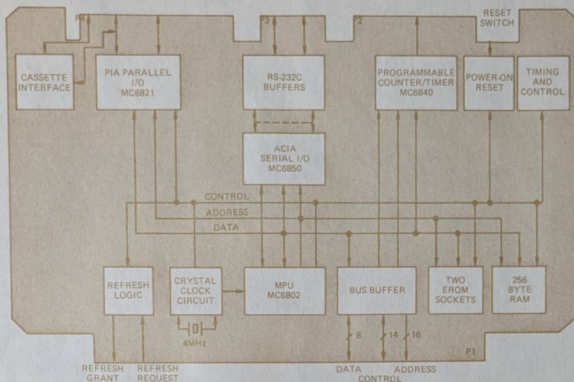
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Memory Map

FFFF F800	2K ROM (6846)	OR	2K ROM/ EROM	OR	AVAILABLE FOR EXTERNAL MEMORY	OR	EXOR ^{ciser} DEBUG MODULE	FFFF
F000	EXTERNAL MEMORY		2K ROM/ EROM		F000			
			AVAILABLE FOR EXTERNAL MEMORY					
								
			PTM = E410-E417					
			ACIA = E408, E409					
			PIA = E400-E403					
								
			RAM = E000-E0FF					
			AVAILABLE FOR EXTERNAL MEMORY					
								
			2K ROM (6846)	OR	2 K ROM/ EROM			
			EXTERNAL MEMORY		2 K ROM/ EROM			
			AVAILABLE FOR EXTERNAL MEMORY					
								
			(6846 I/O = 9100-9107)					
			AVAILABLE FOR EXTERNAL MEMORY					
								
			6802 RAM = 0000-007F					

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Specifications

Power Requirements: +5 Vdc @ 550 mA
 +12 Vdc @ 20 mA
 -12 Vdc @ 25 mA

With EROMs +5 Vdc @ 650 mA
 +12 Vdc @ 260 mA
 -12 Vdc @ 180 mA

System Clock: 1 MHz $\pm$ 0.1%

Word Size: Instruction — 8, 16, or 24 bits
 Address — 16 bits
 Data — 8 bits

Memory Addressing: RAM (128 bytes) — 0000-007F
 RAM (256 bytes) — E000-E3FF
 EROMs (sockets) — C000 to CFFF or F000 to FFFF or AMBIG C000/F000
 PIA-ACIA-PTM — E400 to E7FF

Parallel I/O: 16 bidirectional programmable lines
 4 I/O control lines and/or interrupts

Interrupts: Vectored through software

Timer Input Frequency: 1 MHz, internal or asynchronous external gate/trigger inputs

Timer Operating Modes: Continuous (square wave)
 Single shot
 Frequency comparison
 Pulse/width comparison

Physical Characteristics (W $\times$ H $\times$ T): 9.75 $\times$ 6.00 $\times$ 0.062 in.

Connectors:

Microsystem Bus (P1): 86-Pin — Stanford Applied Engineering SAC-43D/1-2 or equivalent
 Programmable Timers (P2): 40-Pin — 3M Type 3464-0001 or equivalent
 Serial I/O Port (P3): 20-Pin — 3M Type 3461-0001 or equivalent
 Parallel I/O Port (P4): 50-Pin — 3M Type 3415-0001 or equivalent

ORDERING INFORMATION

Use the following part numbers when ordering the Monoboard Microcomputer-Micromodule 1B1A and its associated technical manual. For further information, contact your local sales office.

Part Number	Description
M68MM01B1A	Monoboard Microcomputer 1B1A
M68MM01B1A(D1)	Monoboard Microcomputer 1B1A Manual

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