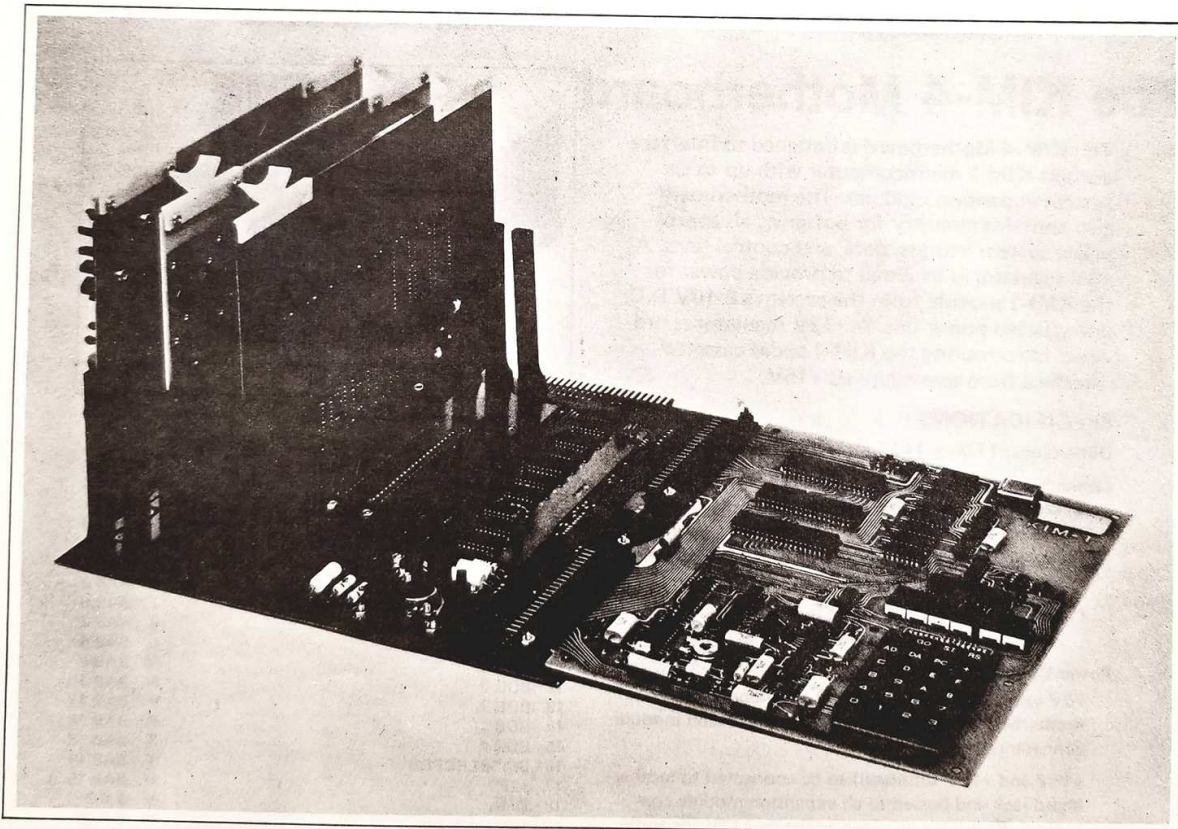
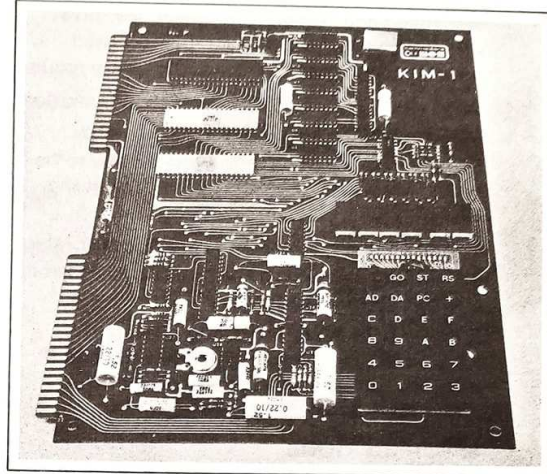




Systems Sales Division
MOS Technology
A Commodore Company
950 Rittenhouse Road
Norristown, Pennsylvania 19401

KIM System Products

For use with the KIM-1™
Microcomputer Board



Shown in place: the KIM-4™ Motherboard connected to the KIM-1 Microcomputer. One each of the KIM-3B™ Memory Expansion Module, the KIM-5™ Resident Assembler/Editor and the KIM-6™ Prototyping Board are connected to the KIM-4 Motherboard.

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The KIM-3B Memory Expansion Module

The KIM-3B Memory Expansion Module is designed for use with systems using the KIM-1 microcomputer. The module is completely assembled and tested. High speed, low power, static memory integrated circuits are used: no memory slowdown or refresh cycles are required.

An on-board regulator allows system operation from a +8 volt unregulated power supply.

Switches on the board allow the boards to be placed at any 8K (KIM-3B) boundary in the system memory space.

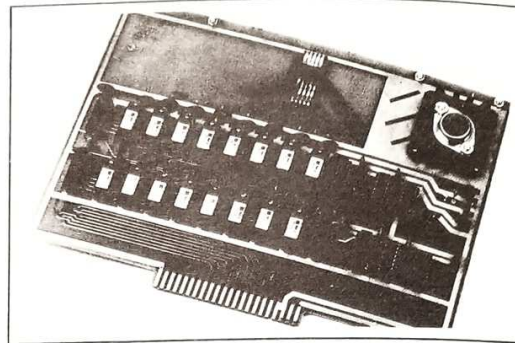
Complete documentation is provided for board installation, checkout, and operation. Schematics and theory of operation are also provided.

A single KIM-3B can be wired directly to a KIM-1 module. System expansion to 65K of memory can be implemented using a KIM-4 motherboard.

SPECIFICATIONS

Current required

- at +5V (5% regulated)
- or 8-10V unregulated: 3.0A



Memory size (8-bit words) 8192 words

Physical Dimensions: 10" x 6½" exclusive of connector tab and removal tabs.

Connector: Single 44-connection male edge connector. Mating female connector—similar to Vector R644. Connector tab is centered on 10" side of board.

Warranty: 90 days parts and labor.

Memory Circuits: High speed, low power 2114-type static memories. 450ns access time. Suitable for systems using 1 MHz, 2 phase clocks.

The KIM-4 Motherboard

The KIM-4 Motherboard is designed to interface a single KIM-1 microcomputer with up to six system expansion modules. The motherboard also contains circuitry for buffering all appropriate system address, data, and control lines. A +5V regulator is included to provide power for the KIM-1 module from the system's 8-10V D.C. unregulated power bus. A +12V regulator is provided for powering the KIM-1 audio cassette interface from user-supplied +15V.

SPECIFICATIONS

Dimensions: 11.0" x 11.5" inclusive of connector tabs.

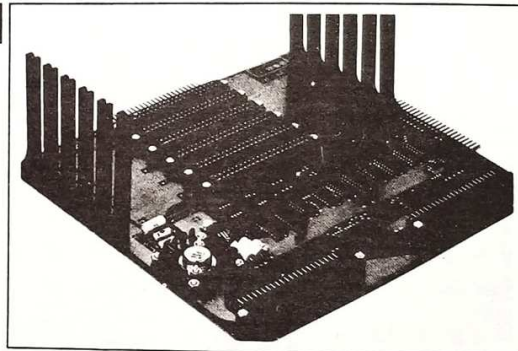
- Connectors provided:
- (6) 44 pin female (similar to Vector R644) for expansion modules.
 - (2) 44 pin female connectors for interface to KIM-1.
 - (1) 44 pin male connector duplicating the function of KIM-1 application connector.
 - (1) 44 pin male with standard bus pinout for connection to expansion motherboard or backplane.

Power Connections:

+8V unregulated system power to be connected to motherboard jack and bussed to all expansion module connectors.

+15V and -15V (optional) to be connected to motherboard jack and bussed to all expansion module connectors. Regulator provided to derive +12V for audio cassette interface from user-supplied +15V.

Note: +5V regulated is not bussed to expansion module connectors. Each module will have on-board regulators powered from the system +8V unregulated bus.



KIM-4

STANDARD BUS CONNECTIONS

1 GND	A GND
2 B SYNC	B BAB 0
3 B RDY	C BAB 1
4 B IRQ	D BAB 2
5 -15V	E BAB 3
6 B NMI	F BAB 4
7 B RST	G BAB 5
8 BDB 7	J BAB 6
9 BDB 6	K BAB 7
10 BDB 5	L BAB 8
11 BDB 4	M BAB 9
12 BDB 3	N BAB 10
13 BDB 2	P BAB 11
14 BDB 1	R BAB 12
15 BDB 0	S BAB 13
16 BD SELECTED	T BAB 14
17 +15V	U BAB 15
18 DMA	V B 0 2
19 +8V RAW DC	W B R/W
20 +8V RAW DC	X B 0 2
21 +5V	Y +5
22 GND	Z GND

*The "B" prefix indicates the same signal output by KIM-1 but buffered on the motherboard. E.G. the B RDY line is the KIM-1 RDY line.

The KIM-5 Resident Assembler/Editor

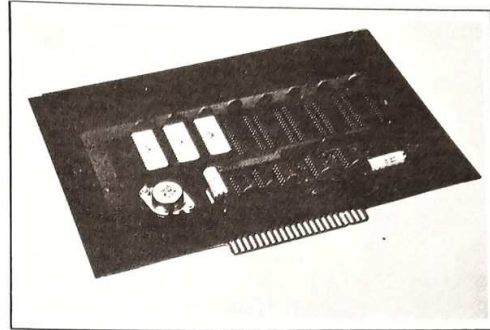
The KIM-5 Resident Assembler/Editor is a complete system for entering, storing, editing and assembling programs for KIM-based processing systems. The program is stored in three MCS6540 ROM packages, mounted on a KIM-4 compatible board. The memory locators are addresses E000 to F7FF.

Text-Editor

A program for creating, editing and saving line-numbered text files stored in a random-access memory.

Functions supported are: Enter new text • Delete text • Find designated string in text • Resequence line numbers • List specified block of text • Load text from paper tape or audio cassette • Dump text to paper tape or audio cassette • Transfer control to assembler • Return to KIM monitor • Clear text area.

Features: Line-number orientation for ease of use • Any command preceded by an "X" is passed to a user-specified routine. The user can create his own commands • Simple interface to paper tape or audio cassette files • User-specified location of text in memory. No restriction on location of text file; multiple text files may be stored in memory simultaneously • Length of text file limited only by available memory • Text files are com-



pletely relocatable • ROM-resident—no need to buy or reload RAM • Complete documentation provided.

Resident Assembler

A single-pass assembler which accepts the entire 650X instruction set. Source code may be memory or paper-tape resident. Object code is always written to memory.

Features: Single pass provides source listing, object code and error messages • User may specify input and output device routines or accept TTY as default • All 650X instruction and addressing modes supported • User defines symbol table and source location for complete memory flexibility • ROM-resident.

The KIM-6 Prototyping Board

The KIM-6 Prototyping Board is a wirewrap board for user-defined expansion of a KIM System.

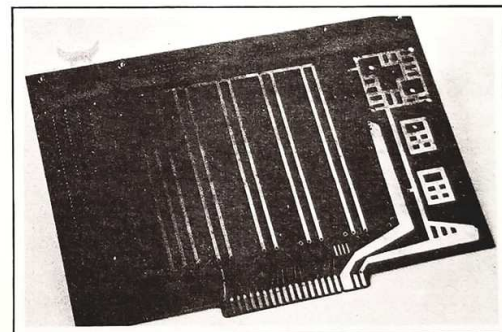
The board provides a 5" x 7½" predrilled area for wirewrap or soldertail IC sockets. The KIM-6 also provides a prewired area for a 5-volt T0-3 style IC voltage regulator, and pads are provided for two additional T0-220 style regulators. PC runs are provided throughout the wirewrap area for V_{CC} and ground busses.

A gold-plated tab connector is provided for standard interconnection to a KIM-4 Motherboard. The board is predrilled to accept two 40-pin flat cable connectors for connection to external devices.

Dimensions: 7" x 10" including tab connector

Board Type: G-10 or equivalent, 4 oz. tin-plated copper

Wirewrap Sockets Accepted: All common pinouts from 14 to 40 pins including 22 pin.



I/O Connectors: (2) Ainsley 609-4042M or equivalent (not supplied)

Bus Connector: KIM Buss 44 pin edge connector (gold-plated). All buss connections brought out to three 16-pin socket pads.

Wirewrap Area: 1144 holes, 5" x 7½" area

commodore



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KIM PRODUCTS

SEPTEMBER 1ST PRICING

KIM 1	\$250.00
KIM 3	390.00
KIM 4	150.00
KIM 5	200.00
KIM 6	52.50

KIM DOCUMENTATION

KIM 1 USER MANUAL	12.00
PROGRAMMING MANUAL	12.00
HARDWARE MANUAL	12.00
KIM MATH SUBROUTINES	12.00
CROSS ASSEMBLER	6.00
TERMINAL INTERFACE MONITOR	6.00
KIM ASSEMBLER MANUAL	12.00
KIM TEXT EDITOR	12.00
DATA SHEETS ON 6522 CHIP	4.00

Commodore and the Commodore Companies

Commodore is a pioneer consumer electronics company. Less than ten short years ago, Commodore recognized the coming revolution in consumer electronics . . . at a time when that industry scarcely existed. By 1971, Commodore introduced the first popular-priced, compact electronic calculator.

Today Commodore is the only consumer electronics company that is thoroughly vertically integrated, with full MOS/LSI chip and LED/LCD display design and production facilities . . . with worldwide sales and service facilities.

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