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 +6V (5% regulated)
or 8-10V unregulated: 3.0A

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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 +6V 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.

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Memory size (8-bit words) 8192 words
Physical Dimensions: 10” x 6¼” 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.

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KIM-4

STANDARD BUS CONNECTIONS

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

*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 completely 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 TO-3 style IC voltage regulator, and pads are provided for two additional TO-220 style regulators. PC runs are provided throughout the wirewrap area for VCC 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