



iSBC 032/048/064 RAM MEMORY BOARDS

iSBC 80 and iSBC 86 RAM memory expansion through direct MULTIBUS interface

32K, 48K, 64K bytes of read/write memory (iSBC 032, iSBC 048, iSBC 064 boards, respectively)

On-board hardware for refresh of all dynamic memory elements

Auxiliary power bus and memory protect control logic provided for battery backup RAM requirements

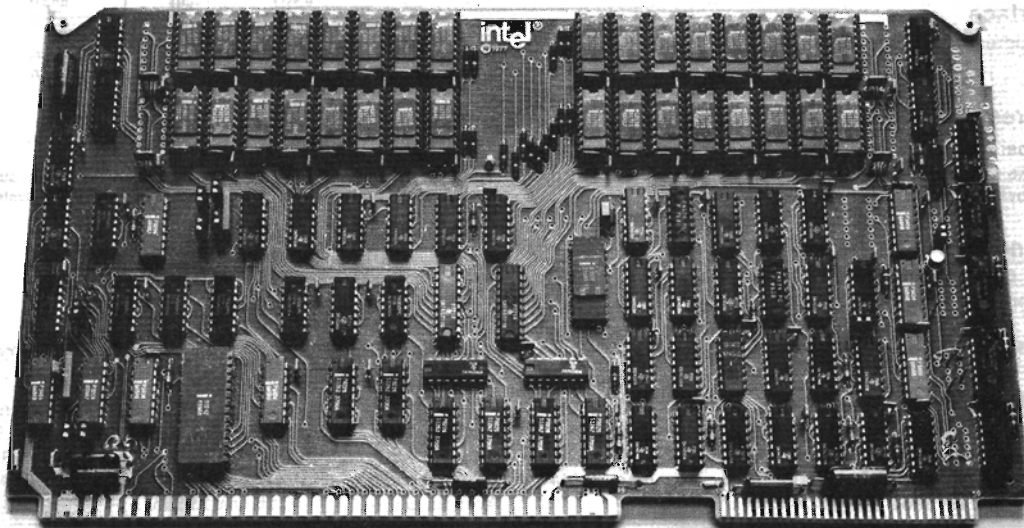
Jumper selectable starting address for independent 16K-byte memory segments

Read/write data buffers

TTL compatible data, address, and command signal interface

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The iSBC 032, iSBC 048, and iSBC 064 RAM Memory Boards are members of Intel's complete line of iSBC memory and I/O expansion boards. Each board interfaces directly to any Intel iSBC 80 or iSBC 86 single board computer via the MULTIBUS interface to expand RAM memory capacity. The iSBC 032 contains 32K, the iSBC 048, 48K, and the iSBC 064, 64K bytes of read/write memory implemented using dynamic RAM memory components. On-board refresh hardware refreshes a portion of RAM memory every 14 microseconds. Each refresh cycle utilizes memory for 585 nanoseconds. If a read or write cycle is in progress when a refresh cycle is scheduled to begin, the refresh cycle is postponed until the end of the cycle. The iSBC 032 contains jumpers used to individually select two independent 16K-byte memory segments, and the iSBC 048 contains jumpers used to individually select three independent 16K-byte memory segments starting on 16K-byte boundaries in one of sixteen 64K-byte pages. Read/write buffers reside on each board to buffer all data written into or read from the memory array. All data, address, and command signals on the bus interface are TTL compatible.



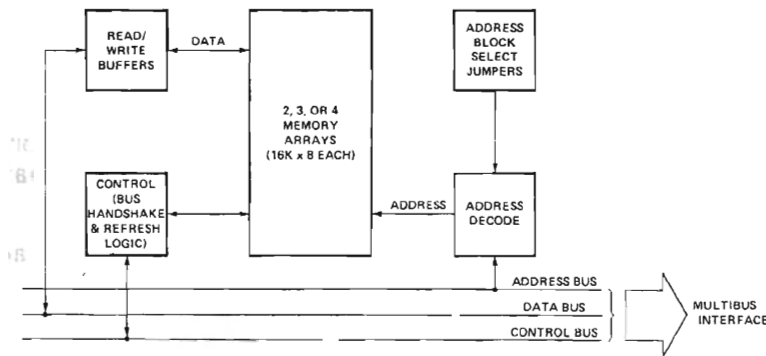


Figure 1. RAM Memory Expansion Boards Block Diagram

SPECIFICATIONS

Word Size

8 bits and 16 bits

Memory Size

32,768 bytes (iSBC 032), 49,152 bytes (iSBC 048), 65,536 bytes (iSBC 064)

Access Time

450 ns max

Cycle Times

Read Cycle — 700 ns max

Write Cycle — 600/1240 ns max

Refresh Cycle — 700 ns max

Interface

All address, data, and command signals TTL compatible.

Address Selection

Jumper selection for independent 16K-byte memory blocks starting on 16K-byte boundaries in one of sixteen 64K-byte pages.

Connectors

Edge Connectors — 86-pin double-sided PC edge connector with 0.156-in. contact centers.

Mating Connector — Viking 3KH43/9AMK12

Auxiliary Power

An auxiliary power bus is provided to allow separate power to RAM for systems requiring battery back up of read/write memory. Selection of this auxiliary RAM power bus is made via jumpers on the board.

ORDERING INFORMATION

Part Number	Description
SBC 032	32K-Byte RAM Board
SBC 048	48K-Byte RAM Board
SBC 064	64K-Byte RAM Board

Memory Protect

An active-low TTL compatible memory protect signal is brought out on the auxiliary connector which, when asserted, disables read/write access to RAM memory on the board. This input is provided for the protection of RAM contents during system power-down sequences.

Physical Characteristics

Width — 12.00 in. (30.48 cm)

Height — 6.76 in. (17.15 cm)

Depth — 0.50 in. (1.27 cm)

Weight — 14 oz (415.2 gm)

Electrical Characteristics

DC Power Requirements

Voltage	Normal System Operation (max) ¹	AUX Power RAM Access (max) ²	AUX Power No RAM Access (max)
V _{CC} = +5V ± 5%	I _{CC} = 3.2A	1.7A	1.7A
V _{DD} = +12V ± 5%	I _{DD} = 600 mA	600 mA	120 mA
V _{BB} = -5V ± 5%	I _{BB} = 10 mA	10 mA	3 mA

Notes

- All current values apply to the iSBC 032, iSBC 048 or iSBC 064 boards and include AUX power.
- RAM chips and RAM control logic powered via auxiliary power bus.
- Power necessary to refresh RAMs and maintain data, as after system power failure.

Environmental Characteristics

Operating Temperature — 0°C to +55°C

Reference Manual

9800488B — iSBC 032/048/064 Hardware Reference Manual (NOT SUPPLIED)

Reference manuals are shipped with each product only if designated SUPPLIED (see above). Manuals may be ordered from any Intel sales representative, distributor office or from Intel Literature Department, 3065 Bowers Avenue, Santa Clara, California 95051.