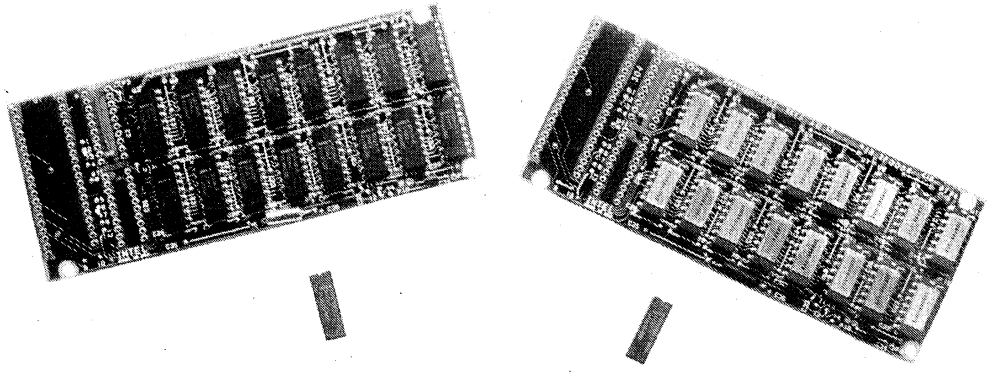
iSBC® 304 128K BYTE RAM MULTIMODULE™ BOARD
iSBC® 300A 32K BYTE RAM MULTIMODULE™ BOARD

- **iSBC® 304 Module Provides 128K Bytes of Dual Port RAM Expansion for the iSBC 86/30 or iSBC 86/35 Board**
- **iSBC 300A Module Provides 32K Bytes of Dual Port RAM Expansion for the iSBC 86/14 Board**
- **Simple, Reliable, Mechanical and Electrical Interconnection**
- **On-Board Memory Expansion for the iSBC 86/30, iSBC 86/14 and iSBC 86/35 Single Board Computers**
- **On-board Memory Expansion Eliminates MULTIBUS® System Bus Latency and Increases System Throughput**
- **Low Power Requirements**

The iSBC 304 and iSBC 300A RAM modules provide simple, low cost expansion of the memory compliment available on the iSBC 86/30 and iSBC 86/14 Single Board Computers, respectively. Each module doubles the on-board RAM memory capacity of the host board. Additionally, the iSBC 304 provides 128K bytes RAM expansion to the iSBC 86/35 giving a total capacity of 640K bytes RAM memory. The RAM MULTIMODULE options for the host boards offer system designers a new level of flexibility in defining and implementing Intel single board computer systems. Because they expand the memory configuration on-board, they can be accessed as quickly as the existing host board memory by eliminating the need for accessing the additional memory via the MULTIBUS system bus.



210329-1

September 1987
Order Number: 210329-002

FUNCTIONAL DESCRIPTION

Each MULTIMODULE contains dynamic RAM devices and sockets for the Intel 8203 dynamic RAM controller and memory interface latching. To install the module, the latches and controller from the host CPU board are removed and inserted into sockets on the RAM MULTIMODULE. The module is then mounted onto the host board. Pins extending from the controller and latch sockets mate with device sockets underneath (see Figure 1). Additional pins mate to supply other signals to complete the electrical interface.

The module is then secured at three additional points with nylon hardware to ensure the mechanical security of the assembly.

To complete the installation, one socketed PROM is replaced on the host CPU board with the one supplied with the MULTIMODULE kit. This is the MULTIBUS address decode PROM which allows the host board logic to recognize its expanded on-board memory compliment.

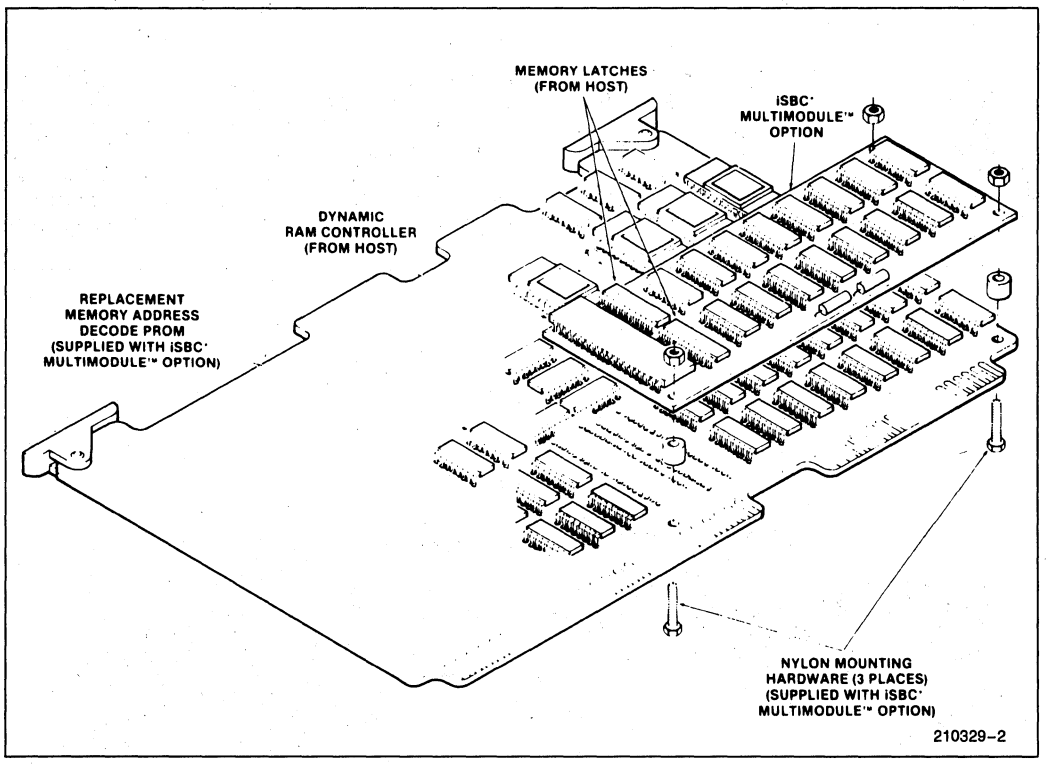


Figure 1. Installation of the MULTIMODULE™ RAM on the Host Single Board Computer

SPECIFICATIONS

Word Size

8 or 16 bits (16-bit data paths)

Memory Size

iSBC 304 Module—128K bytes RAM

iSBC 300A Module—32K bytes RAM

Cycle Time

iSBC 304—700 ns (read); 700 ns (write)

iSBC 300A—700 ns (read); 700 ns (write)

Memory Addressing

CPU ACCESS

iSBC 304 (with iSBC 86/35)—640K bytes (total capacity); 0-9FFFFH (address range)

iSBC 304 (with iSBC 86/30)—256K bytes (total capacity); 0-3FFFFH (address range)

iSBC 300A (with iSBC 86/14)—64K bytes (total capacity); 0-0FFFFH (address range)

MULTIBUS® Access

Jumper selectable for any 32K (8K) byte boundary, but not crossing a 256K (128K) byte boundary on the iSBC 86/30 (iSBC 86/14) host board.

Interface

The interfaces for the iSBC 304 and iSBC 300A module options are designed only for the iSBC 86/30 and iSBC 86/14 host boards, respectively.

Private Memory Allocation

Segments of the combined host/MULTIMODULE RAM memory may be configured as a private resource, protected from MULTIBUS system access. The amount of memory allocated as a private resource may be configured in increments of 25% of the total on-board memory ranging from 0% to 100%. The iSBC 304 module mounted on the iSBC 86/30 board, therefore, supports private allocation of 64K, 128K, 192K, or 256K bytes of RAM memory.

The iSBC 300A module mounted on the iSBC 86/14 board supports private allocation of 16K, 32K, 48K, or 64K bytes of RAM memory.

Auxiliary Power

The low power memory protection option included on the CPU host boards supports the RAM modules.

Physical Characteristics

Width: 2.4 in. (6.10 cm)

Height: 5.75 in. (14.61 cm)

Depth*: 0.72 in. (1.83 cm)

Weight: 0.13 oz. (59 g)

***NOTE:**
Combined depth including host board.

Electrical Characteristics

DC POWER REQUIREMENTS

iSBC 304: 640 mA at +15V incremental power

iSBC 300A: 256 mA at +5V incremental power

Environmental Characteristics

Operating Temperature: 0°C to 55°C

Relative Humidity: to 90% (without condensation)

Reference Manual

All necessary documentation for the iSBC 304 and iSBC 300A MULTIMODULE boards is included in the iSBC 86/14 and iSBC 86/30 Hardware Reference Manual, Order No. 144044-002 (NOT SUPPLIED).

Manuals may be ordered from any Intel sales representative, distributor office or from Intel Literature Department, 3065 Bowers Avenue, Santa Clara, CA 95051.

ORDERING INFORMATION

Part Number	Description
SBC 304	128K MULTIMODULE option for iSBC 86/30 or iSBC 86/35 CPU boards
SBC 300A	32K MULTIMODULE option for iSBC 86/14 board