

SIMM Memory Systems

Today, most computer use SIMMs (single in-line memory modules) for main memory. SIMMS typically offer eight bit wide words (byte wide) with different number of addresses. The most common SIMMs in use today are 4 Mbytes (four million address by eight bit words).

Part A Suppose these four MByte SIMMS are used to build a 16 million address memory system with 32 bit words. Answer the following questions about this memory system:

How many address lines does each SIMM require? _____

How many address lines does the entire memory system require? _____

How many SIMMS are require for the entire memory system? _____

What kind of address decoder is required? _____ to _____

Part B Now use four of these SIMMs to build a eight million address by 16 bit word memory system. Be sure you label the memory system inputs, Addr, R/W, and Mem Sel, and the system's outputs D0, D1, D2, etc. Also label bus widths, and inputs and outputs of any required decoders. **Put a star on the chips containing memory location 0.**

8 million address
16 bit words

