3.8.6 Memory Installation Facts

When installing memory remember that modules are very sensitive to ESD. Be sure to take proper steps to prevent ESD.

- You can add single memory modules to computers that use DDR (including 2, 3, and 4).
- Install memory in the correct slot. Although several memory slots might be open, some system boards require that you use specific slots. Check the system board documentation for more details.
  - For many systems, start with the first bank. The first memory bank is often closest to the processor.
  - On some systems you should fill each bank in order.
- Align the memory before inserting, and do not force the module in place. Most memory is keyed to prevent it from being installed backwards or in incompatible slots.
- Most RAM is held in place with small tabs on either end. To remove RAM from a motherboard, push the tabs down to rotate them back, then pull the RAM straight up.
- For a dual-, triple-, and quad-channel configuration:
  - Modules must be installed in matching sets (capacity and speed), preferably of the same manufacturer and model.
  - You can typically use different capacity modules between sets. For example, you can use two 1 GB modules as one set and two 512 MB modules in the second set.
  - Install modules in the slots specified in the motherboard documentation. Many motherboards color the slots, with slots used within a set having the same color.

  If you install single memory modules, the system will continue to use the memory, but cannot use the memory in dual-channel mode.
- Following installation, power on the system and check for errors. Most BIOS programs include a memory count that displays the total amount of system memory. If it does not count the proper amount of memory, you may have installed the memory incorrectly or you may have a faulty memory module. Also, if the BIOS generates an error between 200 and 299, the error is a memory error.
- Most systems will configure memory settings (frequency, voltage, and timing including latency) automatically based on information in the EEPROM chip. If necessary, edit the BIOS to manually configure memory settings.