BIOS - Basic Input/Output System

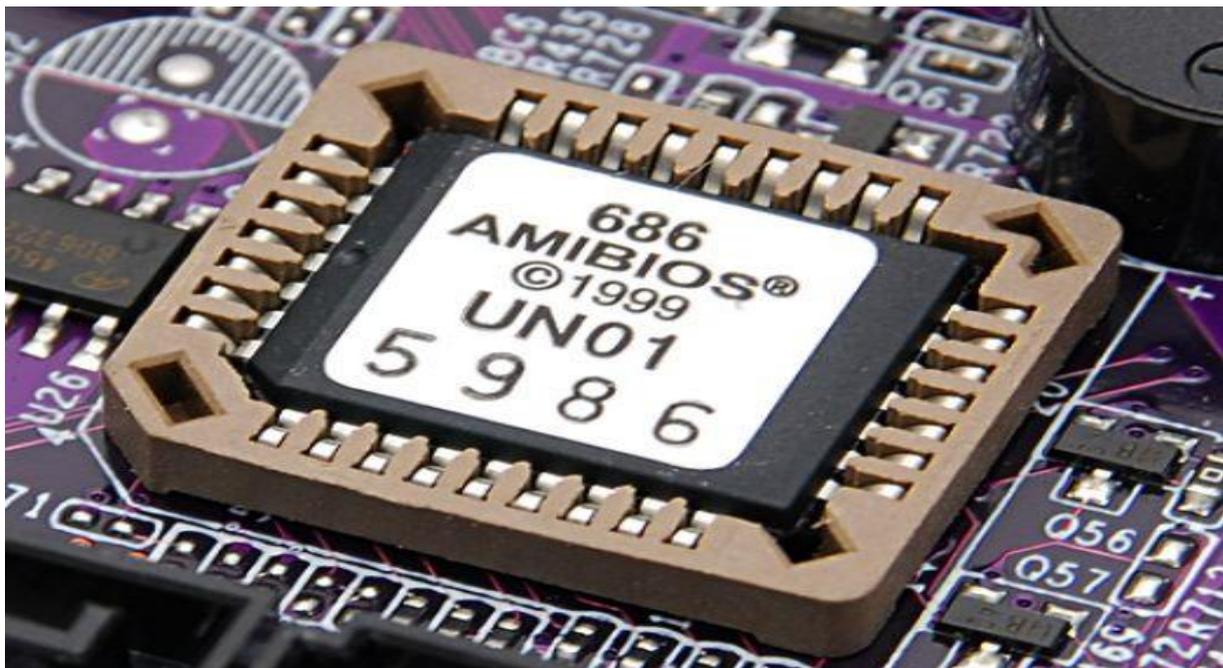**Subject - Computer** **Date of Release -19-JAN-2018**

For IBM PC compatible computers, BIOS (an acronym for Basic Input/Output System and also known as the System BIOS, ROM BIOS or PC BIOS) is non-volatile firmware used to perform hardware initialization during the booting process (power-on startup), and to provide runtime services for operating systems and programs.

The BIOS firmware comes pre-installed on a personal computer's system board, and it is the first software run when powered on. The name originates from the Basic Input/Output System used in the CP/M operating system in 1975.

Originally proprietary to the IBM PC, the BIOS has been reverse engineered by companies looking to create compatible systems. The interface of that original system serves as a de facto standard.

The BIOS in modern PCs initializes and tests the system hardware components, and loads a boot loader or an operating system from a mass memory device. In the era of MS-DOS, the BIOS provided a hardware abstraction layer for the keyboard, display, and other input/output (I/O) devices that standardized an interface to application programs and the operating system. More recent operating systems do not use the BIOS after loading, instead accessing the hardware components directly.

Most BIOS implementations are specifically designed to work with a particular computer or motherboard model, by interfacing with various devices that make up the complementary system chipset.

Originally, BIOS firmware was stored in a ROM chip on the PC motherboard. In modern computer systems, the BIOS contents are stored on flash memory so it can be rewritten without removing the chip from the motherboard.

This allows easy, end-user updates to the BIOS firmware so new features can be added or bugs can be fixed, but it also creates a possibility for the computer to become infected with BIOS rootkits. Furthermore, a BIOS upgrade that fails can brick the motherboard permanently, unless the system includes some form of backup for this case.