# Apple IIGS: Differences with other Apple II models

Some of the features found only on the Apple IIGS:

| FEATURE | SPECIFICATION | DESCRIPTION |
|---------|---------------|-------------|
| More powerful microprocessor | 65C816 | 16-bit microprocessor has 24 bit address and 6502 compatibility |
| Faster Operation | CPU clock speeds of 1 MHz and 2.8 MHz | User can select either of two speeds: 1 MHz speed of 6502 or fast 2.8 MHz. |
| Memory Expansion | 24-bit address bus | Expansion card can expand RAM up to as much as 8 megabytes |
| Detached Keyboard | 78 keys | Separate keyboard includes cursor keys and numeric pad. |
| Apple DeskTop Bus | Low cost serial I/O | Supports detached keyboard, mouse, and other I/O devices. |
| RGB Video | R, G, B and sync | Provides both RGB and NTSC video outputs. |
| 40 and 80 column text in color | Text, background, and border colors (RGB only) | Text, background, and border can be any of sixteen colors. |
| Super Hi-Res color | True 320x200 or 640x200 | Improved graphics with up to 16 graphics colors per scan line-up to 256 colors on screen out of 4096. |
| Desktop user interface | Uses Hi-Res color graphics and mouse | Tool box supports desktop interface with mouse, menus, and windows |
| Improved Sound | Ensoniq digital sound IC with 32 oscillators | Supports 15 independent voices (GS retains Apple II type sound) |
| Control Panel | Built-in desk accessory | User may set machine parameters for display, |

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                                        operating speed,
                                        serial ports, disk drives,
                                        etc.


Enhanced Monitor    Monitor in ROM      Handles 16-bit and 24-bit
                                        addresses, assembles and
                                        disassembles 65C816 and 6502
                                        instructions, performs 32-bit
                                        arithmetic, Low level I/O
                                        included


Built-in Clock      Time and Date provided  Has battery back up


Built-in Serial     Two standard serial ports  Support modems, printers, and
ports                                   AppleTalk. (User can still
                                        use serial card in slot)


Built-in AppleTalk  Uses one serial port    No card required. User can
                                        select either serial port to
                                        use for AppleTalk.


Built-in Disk port  Disk I/O port using custom  User can select built-in
                    chip                driveport,disk interface
                                        cards, or both.


Apple II type features found on the Apple IIGS:

FEATURE             DESCRIPTION         OTHER MODELS
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6502 Instruction    65816 has emulation mode  All Apple II
set                 for running 6502 programs


128k RAM            Main and aux banks, with  IIc, 128 IIe
                    language-card & I/O spaces


AppleSoft in ROM    Applesoft Basic with lower  All Apple II
                    case and 80-column features


Monitor in ROM      Supports low level I/O and  All Apple II
                    program development


40 and 80 column    Black & White text displays  IIc, IIe with 128k or 80
text                (color text on GS only)  column card


Lo-Res Color        48x40, 16 colors    All Apple II
graphics


Hi-Res Color        280x192, 6 colors   All Apple II
graphics


Double Hi-Res       560x192, 16 colors  IIc, 128k IIe
Color graphics
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Built-in serial     Two RS232 compatible ports,  IIc (similar)
ports               for modem, printer, etc.

Built-in disk port  Using IWM chip, supports     IIc
                    both 5.25", 3.5" drives

Expansion slots (7) Slots for peripheral I/O     II, II Plus, IIe
                    and expansion cards, in
                    addition to built-in ports

Game I/O            9-pin and 16-pin connectors All Apple II (9 pin IIe, IIc)
                    for paddles and joysticks
Apple Technical Communications


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