# HP

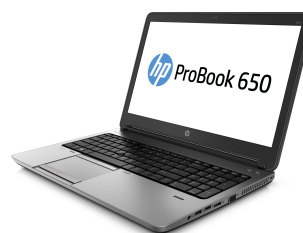# HP ProBook 650 G1 i5-4300M Notebook 39.6 cm (15.6") Intel® Core™ i5 4 GB DDR3L-SDRAM 500 GB HDD Windows 7 Professional Black, Silver

**Brand :** HP          **Product family:** ProBook          **Product code:** J1C94UC

**Product name :** 650 G1

Intel Core i5-4300M (2.6GHz, 3MB), 15.6" HD LED SVA anti-glare (1366 x 768), 4GB (1 x 4GB) DDR3L SDRAM, 500GB SATA 7200 rpm, DVD+/-RW SuperMulti DL, Intel HD Graphics 4600, 802.11a/b/g/n, Bluetooth 4.0, webcam, Windows 7 Professional 64
HP ProBook 650 G1. Product type: Notebook, Form factor: Clamshell. Processor family: Intel® Core™ i5, Processor: i5-4300M, Processor frequency: 2.6 GHz. Display diagonal: 39.6 cm (15.6"), Display resolution: 1366 x 768 pixels. Internal memory: 4 GB, Internal memory type: DDR3L-SDRAM. Total storage capacity: 500 GB, Storage media: HDD, Optical drive type: DVD Super Multi DL. On-board graphics card model: Intel® HD Graphics 4600. Operating system installed: Windows 7 Professional. Product colour: Black, Silver

| Design | | | Ports & interfaces | | |
|---|---|---|---|---|---|
| Product type * | Notebook | | DVI port | ✖ | |
| Product colour * | Black, Silver | | VGA (D-Sub) ports quantity | 1 | |
| Form factor * | Clamshell | | Combo headphone/mic port | ✓ | |
| Country of origin | China | | Docking connector | ✓ | |
| **Display** | | | Charging port type | DC-in jack | |
| Display diagonal * | 39.6 cm (15.6") | | Serial ports quantity | 1 | |
| Display resolution * | 1366 x 768 pixels | | **Keyboard** | | |
| Touch screen * | ✖ | | Pointing device | Touchpad | |
| LED backlight | ✓ | | Numeric keypad * | ✓ | |
| Native aspect ratio | 16:9 | | Spill-resistant keyboard | ✓ | |
| **Processor** | | | **Software** | | |
| Processor manufacturer * | Intel | | Operating system architecture | 64-bit | |
| Processor generation | 4th gen Intel® Core™ i5 | | Operating system installed * | Windows 7 Professional | |
| Processor * | i5-4300M | | **Processor special features** | | |
| Processor family * | Intel® Core™ i5 | | Intel Wireless Display (WiDi) Technology | ✓ | |
| Processor frequency * | 2.6 GHz | | | | |
| Processor boost frequency | 3.3 GHz | | Intel My WiFi Technology | ✖ | |
| Processor number of cores | 2 | | Intel Anti-Theft Technology | ✓ | |
| Processor threads | 4 | | Intel Identity Protection Technology | ✓ | |
| System bus data transfer rate | 5 GT/s | | Intel Hyper-Threading Technology | ✓ | |
| Processor cache | 3 MB | | Intel Turbo Boost Technology | 2.0 | |
| Processor cache type | Smart Cache | | Enhanced Intel SpeedStep Technology | ✓ | |
| Processor socket | PGA946 | | | | |
| Processor lithography | 22 nm | | Intel Clear Video HD Technology | ✓ | |
| Processor operating modes | 64-bit | | Intel Clear Video Technology | ✖ | |
| Processor series | Intel Core i5-4300 Mobile series | | Intel® InTru™ 3D Technology | ✓ | |
| Processor codename | Haswell | | Intel® Insider™ | ✓ | |
| Bus type | DMI | | Intel® Quick Sync Video Technology | ✓ | |
| FSB Parity | ✖ | | Intel Flex Memory Access | ✖ | |
| Stepping | C0 | | Intel® Smart Cache | ✓ | |
| Motherboard chipset | Intel® QM87 | | Intel AES New Instructions | ✓ | |

## Processor

| | |
|---|---|
| Thermal Design Power (TDP) | 37 W |
| Tjunction | 100 °C |
| Maximum number of PCI Express lanes | 16 |
| PCI Express slots version | 3.0 |
| PCI Express configurations | 1x16, 2x8, 1x8+2x4 |
| ECC supported by processor | ✖ |

## Memory

| | |
|---|---|
| Internal memory * | 4 GB |
| Internal memory type | DDR3L-SDRAM |
| Memory clock speed | 1600 MHz |
| Memory layout (slots x size) | 1 x 4 GB |
| Memory slots | 2x SO-DIMM |
| Maximum internal memory * | 16 GB |

## Storage

| | |
|---|---|
| Total storage capacity * | 500 GB |
| Storage media * | HDD |
| Total HDDs capacity | 500 GB |
| Number of hard drives installed | 1 |
| Hard drive capacity | 500 GB |
| Hard drive interface | SATA |
| Hard drive rotational speed | 7200 RPM |
| Optical drive type * | DVD Super Multi DL |
| Card reader integrated | ✓ |

## Graphics

| | |
|---|---|
| Discrete graphics card model * | Not available |
| On-board graphics card * | ✓ |
| Discrete graphics card * | ✖ |
| On-board graphics card family | Intel® HD Graphics |
| On-board graphics card model * | Intel® HD Graphics 4600 |
| On-board graphics card base frequency | 400 MHz |
| On-board graphics card dynamic frequency (max) | 1250 MHz |
| Maximum on-board graphics card memory | 1.74 GB |
| On-board graphics card DirectX version | 11.1 |
| On-board graphics card ID | 0x416 |

## Audio

| | |
|---|---|
| Audio system | DTS Studio Sound |
| Number of built-in speakers | 2 |
| Built-in microphone | ✓ |

## Camera

| | |
|---|---|
| Front camera | ✓ |

## Network

| | |
|---|---|
| Wi-Fi | ✓ |
| Wi-Fi standards | 802.11a, 802.11b, 802.11g |
| Ethernet LAN connection | ✓ |
| Ethernet LAN data rates | 10,100,1000 Mbit/s |
| Bluetooth | ✓ |
| Bluetooth version | 4.0 |

## Ports & interfaces

| | |
|---|---|
| USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity * | 5 |
| Ethernet LAN (RJ-45) ports quantity | 1 |
| DisplayPorts quantity | 1 |

## Processor special features

| | |
|---|---|
| Intel Trusted Execution Technology | ✓ |
| Intel Enhanced Halt State | ✖ |
| Intel VT-x with Extended Page Tables (EPT) | ✓ |
| Intel Demand Based Switching | ✖ |
| Intel® Secure Key | ✓ |
| Intel TSX-NI | ✖ |
| Intel Clear Video Technology for MID | ✖ |
| Intel 64 | ✓ |
| Execute Disable Bit | ✓ |
| Idle States | ✓ |
| Thermal Monitoring Technologies | ✓ |
| Processor package size | 37.5 x 37.5 x 4.7 mm |
| Supported instruction sets | AVX 2.0, SSE4.1, SSE4.2 |
| Processor code | SR1H9 |
| CPU configuration (max) | 1 |
| Embedded options available | ✖ |
| Intel Virtualization Technology for Directed I/O (VT-d) | ✓ |
| Intel Identity Protection Technology version | 1.00 |
| Intel Secure Key Technology version | 1.00 |
| Intel TSX-NI version | 0.00 |
| Intel Virtualization Technology (VT-x) | ✓ |
| Intel Dual Display Capable Technology | ✖ |
| Intel FDI Technology | ✖ |
| Intel Rapid Storage Technology | ✖ |
| Intel Fast Memory Access | ✖ |
| Processor ARK ID | 76347 |
| Conflict-Free processor | ✓ |

## Battery

| | |
|---|---|
| Battery technology | Lithium-Ion (Li-Ion) |
| Number of battery cells | 6 |
| Battery capacity * | 55 Wh |

## Energy Management

| | |
|---|---|
| AC adapter power | 65 W |

## Security

| | |
|---|---|
| Cable lock slot | ✓ |
| Trusted Platform Module (TPM) | ✓ |

## Sustainability

| | |
|---|---|
| Sustainability certificates | ENERGY STAR |

## Weight & Dimensions

| | |
|---|---|
| Width | 378 mm |
| Depth | 257 mm |
| Height | 25.3 mm |
| Weight * | 2.32 kg |

## Other features

| | |
|---|---|
| Intel segment tagging | Enterprise |