

Fanless Slim PC with Celeron processor for numerous applications

The DS 5700BA is a fanless slim PC with a robust 1.3 litre metal chassis and exceptional connectivity: HDMI, DisplayPort, Dual Intel LAN, USB 3.0/2.0, serial ports, audio, card reader and W-LAN. The built-in Dual Core Intel Celeron processor with integrated HD graphics provides ample performance for fluent playback of video at 1080p Full HD quality. Thanks to its re-designed passive cooling architecture, the system is virtually maintenance-free. It is big on performance, yet extremely energy-efficient. The Shuttle Slim-PC DS 5700BA is ideal for professional applications such as digital signage, POS, Kiosk, Thin Client, Cloud Computing, Office PC and Multimedia. This system is equipped with 4 GB of DDR3 memory, a 120 GB SSD and Windows 7 Professional operating system.

1.3L Slim PC System **DS 5700BA**



Feature Highlights

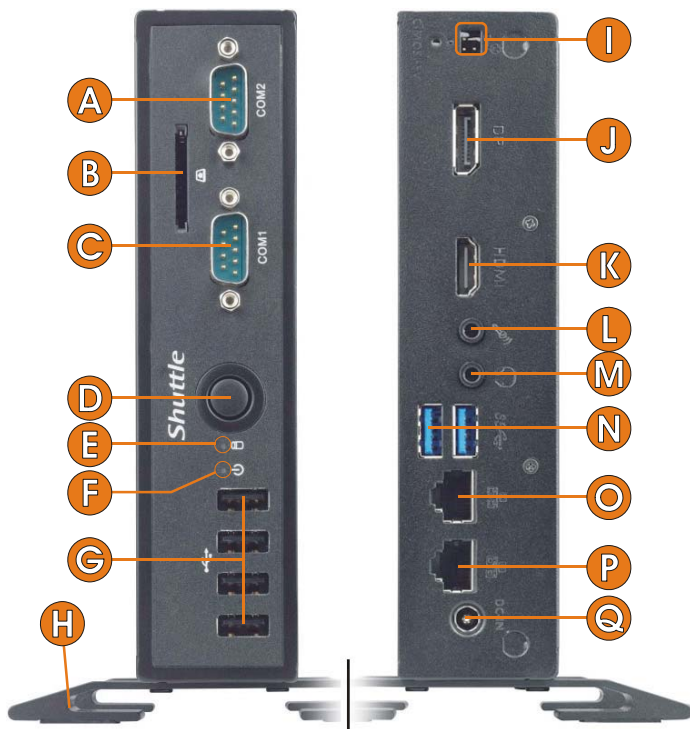
Slim Design	<ul style="list-style-type: none"> • Slim 1.3 litre metal chassis, black • Dimensions: 20 x 16.5 x 3.95 cm (LWH) • Incl. Stand & VESA mount (75/100 mm)
Operating System	<ul style="list-style-type: none"> • Windows 7 Professional, 64 Bit
Processor	<ul style="list-style-type: none"> • Intel Celeron 3205U, Dual Core, 1.5 GHz • Integrated Intel HD graphics, DX 11.2 • Fanless heatpipe cooling
Memory	<ul style="list-style-type: none"> • 4 GB DDR3L-1600 memory (SO-DIMM)
Storage	<ul style="list-style-type: none"> • 120 GB 2.5" SSD drive • Supports one mSATA flash drive
Connectors	<ul style="list-style-type: none"> • HDMI 1.4, DisplayPort 1.2 • 2x USB 3.0 rear, 4x USB 2.0 front • SD card reader, 2x Audio (Line out + mic) • Dual Gigabit LAN (RJ45), WLAN 802.11n • 2x COM ports (RS232 + RS232/RS422/RS485) • Connector for external power button • Onboard: Embedded DisplayPort (eDP)
Power Supply	<ul style="list-style-type: none"> • External 65 W fanless power adapter
Applications	<ul style="list-style-type: none"> • Digital Signage, POS, control device, etc.
Warranty	<ul style="list-style-type: none"> • 24 months Pick-up-and-Return Service



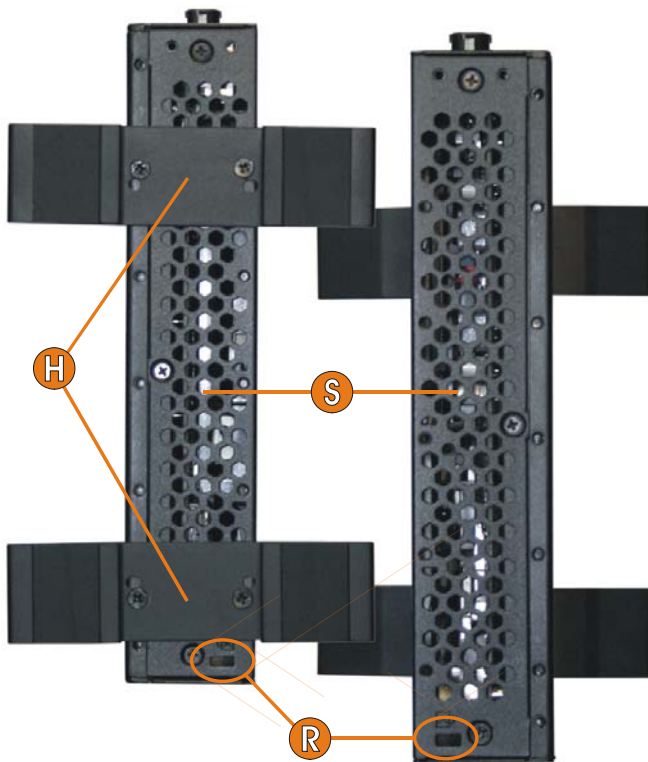
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Shuttle Slim-PC System DS 5700BA – Product Views



- A COM2: RS-232
- B SD card reader
- C COM1: RS-232/422/485
- D On/Off power button
- E Hard disk LED indicator
- F Power LED indicator
- G 4x USB 2.0
- H Stand with screws
- I Pin connector for external power or CMOS button or 5V DC voltage supply
- J DisplayPort Audio/Video output
- K HDMI Audio/Video output
- L Microphone input
- M Head phone output
- N 2x USB 3.0
- O RJ45 Gigabit LAN (Intel i218LM)
- P RJ45 Gigabit LAN (Intel i211)
- Q DC connector for external power adapter
- R Hole for Kensington lock
- S Ventilation holes
- T Bay for 2.5" storage (HDD or SSD) *
- U Slot for Mini PCIe card or mSATA module (full size or half size) *
- V Slot for half size WLAN module *
- W 2x SO-DIMM slot for DDR3L memory modules at 1.35V *



*) Memory, SSD and WLAN module is included. The mSATA module is not included.

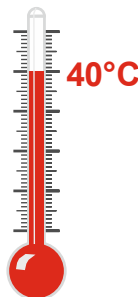
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Shuttle Slim-PC System DS 5700BA – Product Features



Robust, Stylish and Extremely Small

You should have held it in your own hands to experience how small it actually is. Barely 1.35 litre in volume, its rigid steel chassis design meets the high standards towards quality and stability that are essential for professional applications like digital signage. Despite its diminutive size, the processing power inside the DS 5700BA is sufficient to meet the needs of the most demanding multimedia and computational workloads. The well-designed interior of the DS 5700BA makes installations and upgrades effortless. Its sleek and stylish look blends seamlessly in both home and office environments.



24/7 nonstop operation and 0~40°C temperature range

The Shuttle Slim-PC System DS 5700BA is officially approved for 24/7 permanent operation. Thanks to its low power consumption and completely passive cooling, this PC runs highly reliably making it perfectly suitable for digital signage and POI/POS applications – even at ambient temperatures of up to 40 °C. [5]

Conditions for permanent use:

- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must stay clear



No fan noise

A large heatsink is concealed behind a plastic cover and cools down the processor in a passive way without any fan. Using an SSD drive instead of a hard disk makes the system virtually noiseless and hence perfectly suitable for noise-sensitive environments like e.g.a library, living room, music studio or even a bedroom.



Energy-saving

Power consumption mainly depends on system load. Equipped with a 2.5" hard disk, the system consumes about 12.5 W in idle mode and max. 26.5 W under full load. Running the device 5 days a week for eight hours a day in idle mode, the annual consumption would amount to less than 26 kWh which would mean just 6,5 Euros on the power bill (25 Euro ct/kWh) - way less than a conventional desktop PC draws.



Intel® Celeron™ 3205U Processor

The Shuttle Slim-PC System DS 5700BA is equipped with an Intel® Celeron™ 3205U processor which is soldered to mainboard and passively cooled by a large heatsink. This ultra low voltage (ULV) processor belongs to Intel's fifth-generation Intel Core processor family (codename: "Broadwell") manufactured in a new energy-efficient 14 nm architecture. As a result of further integration, it comes as a system-on-a-chip (SoC) without the need of an extra chipset. Broadwell is the first Intel chip to fully support DirectX 11.2 as well as OpenCL 1.3/2.0 and OpenGL 4.3. Video is put out natively via DisplayPort 1.2 or HDMI 1.4a. The Shuttle Slim-PC System DS 5700BA is capable of decoding Full HD video with driver support for all major operation systems including Windows 7, Windows 8.1 and Linux.



Great Connectivity

Despite its small size, the Shuttle Slim-PC System DS 5700BA sports a wide range of I/O connectors. Besides an SD card reader, it comes with a couple of USB 3.0, USB 2.0, Gigabit-LAN, digital video, audio and serial ports.



Dual View Technology with HDMI and DisplayPort

The Shuttle Slim-PC System DS 5700BA features two digital video outputs: HDMI and DisplayPort. Dual View technology offers multiple display support on up to two separate monitors. This helps improve on productivity by allowing for spreading multiple windows across two monitors while working with them simultaneously.



Dual Gigabit Intel LAN Network

Today's media-rich communications across the internet and within enterprises create new demands for clients in Local Area Networks. For that reason, Shuttle applies Gigabit LAN performance to their Mini-PCs and the Shuttle Slim-PC System DS 5700BA even supports two of them. Intel network adapters are popular for their excellent performance and driver compatibility and are the preferred choice for professional environments.

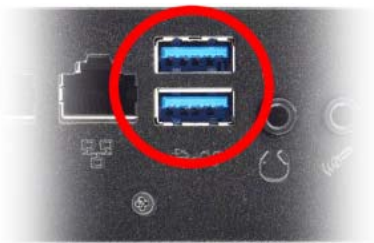


COM ports with plastic caps



RS-232
RS-422
RS-485

RS-232



Two serial ports

Many PCs do not have these legacy ports any longer, since they have been superseded and replaced by USB for most consumer applications, but they are still commonly used for applications such as industrial automation systems, scientific analysis, POS systems and other such fields of application. The Shuttle Slim-PC System DS 5700BA features two serial RS-232 ports which also support both 5 and 12V auxiliary voltage. The left COM port (COM1) also supports the RS422 and RS485 standard. The COM ports are protected by black plastic caps.

COM port Pin 9 Configuration

Pin 9 of the COM-Port is a multi-functional signal (see red circle on the photo). Based on the Jumper JP1 configuration on the mainboard, it can be configured as Ring Indicator (RI) or external power supply with a voltage level of either 5V or 12V (each COM port can be configured separately).

USB 3.0

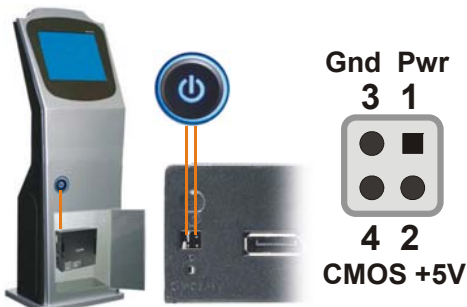
The Shuttle Slim-PC System DS 5700BA has six USB ports, two of which are USB 3.0. USB 3.0 "SuperSpeed" provides a significant performance increase over previous USB generations making it the ideal interface solution for demanding, external peripherals. USB 3.0 supports up to 5Gb/s full duplex which means an up to 10 times greater performance than USB 2.0.

VESA mount

The supplied 75/100mm VESA mount allows the Shuttle Slim-PC System DS 5700BA to be wall-mounted or just to be affixed on the rear side of a monitor which is particularly interesting for the industry segment, company buildings and public institutions. Besides, the chassis of the Shuttle Slim-PC System DS 5700BA provides numerous threaded holes (M3) enabling it to be fitted almost anywhere.

SD Card Reader

The built-in SD card reader at the front side makes file transfer from and to a digital camera easy. It takes SD, SDHC and SDXC memory flash cards in standard size format and also supports booting from bootable SD cards.



External power button by separate remote line

If space is an object (e.g. in case of a fixed installation) and the machine cannot be switched on by pressing the front power button, it can be powered on by a separate remote line. An appropriate four-pin-connector "SW2" can be found at the back panel of the Shuttle Slim-PC System DS 5700BA (pitch 2.54 mm). In addition, this connector also provides the Clear CMOS function and an external 5VDC voltage supply.



Location of Jumper J7

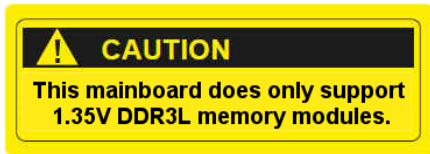
Power on after Power fail

The BIOS setup provides a "Power-On after Power Fail" function that can be found under "Power Management Configuration". As the name indicates, this function determines the PC's behaviour after power failure: (1) unconditional power on, (2) restore former status, (3) keep system turned off or (4) PowerOn by LAN. As a matter of the nature of this function, it may fail after short power failures. This is why the DS 5700BA also comes with a hardware-based solution. By removing Jumper J7 (see quick guide) the system will start unconditionally once power is applied.



Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. The Shuttle Slim-PC System DS 5700BA provides an appropriate hole on both sides of its chassis. The lock-and-cable is not included.



Supports Energy-Efficient DDR3L memory only

Please note that this PC does only support 1.35V DDR3L memory modules. DDR3L has a lower operation voltage compared to DDR3 and draws less power without compromising on performance or reliability.



Operating Position

The passive cooling system of the Shuttle Slim-PC System DS 5700BA uses heat convection which requires the device to be operated in correct position. Please follow the below instructions in order to maintain the best possible cooling effect:

- 1) Device must only be used in vertical position with the DisplayPort facing up.
- 2) Please make sure to use either the supplied feet or the VESA mount.

Supplied accessory: VESA mount with screws



Shuttle Slim-PC System DS 5700BA Specifications

<i>Fanless and Silent</i>	<p>Passive cooling, no fan noise at all Perfect to be used in noise-sensitive environments Fanless, dust-free and thus virtually maintenance-free</p>
<i>Low Power Consumption</i>	<p>Power consumption: idle: 12.5 W, full load: 17 / 26.5 W (without/with graphics)</p>
<i>24/7 Nonstop Operation</i>	<p>This device is approved for 24/7 permanent operation. Requirements: - Free circulation of air amongst the PC must be guaranteed. - Ventilation holes must stay clear. - If a hard disk is installed, this must also be approved for permanent operation by its manufacturer</p>
<i>Chassis</i>	<p>Slim-PC (Nettop) with black chassis made of steel Without cooling fan, passive cooling only The bays for memory, 2.5" drives and Mini-PCIe cards can be easily accessed by removing two cover plates. Dimensions: 200 x 165 x 39.5 mm (LWH) = 1.3 litres Weight: 1.43 kg net and 2.13 kg gross Two holes for Kensington Lock and numerous threaded holes (M3) at both sides of the chassis</p>
<i>Operation Position</i>	<p>1) Device must only be used in vertical position with the DisplayPort port facing up. 2) Please make sure to use either the supplied feet or the VESA mount.</p>
<i>Operation System</i>	<p>Windows 7 Professional, 64 Bit</p>
<i>Processor</i>	<p>Model: Intel Celeron 3205U (ULV) System-on-a-chip architecture (SoC): no chipset required Code name: Broadwell (5th Generation Intel Core) Cores / Threads: 2 / 2 Clock rate: 1.5 GHz L1/L2/L3 Cache: 128 kB / 512 kB / 2048 kB Memory controller: DDR3L-1600 Dual Channel (1.35V) TDP wattage: 15 W maximum Manufacturing process: 14 nm Maximum Tjunction Temperature: 105°C Integrated Intel HD graphics engine Supports 64 Bit, VT-x, VT-d, Enhanced SpeedStep, NX bit, SSE 4.1/4.2</p>

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<p><i>Integrated Graphics</i></p>	<p>Intel HD graphics Two digital audio/video ports: DisplayPort 1.2 [7] and HDMI 1.4a Clock rate: 300~800 MHz Maximum resolution: 2560 x 1600 Execution Units (EU): 12 Supports two independent screens Supports DirectX 11.2, OpenCL 1.3/2.0, OpenGL 4.3 Supports DisplayPort 1.2, HDMI 1.4a Supports full AVC/VC1/MPEG2 hardware decoding Supports HD video plus multi-channel digital audio via a single cable Dynamic, shared memory: up to 1632 MB</p>
<p><i>Mainboard BIOS</i></p>	<p>Shuttle Mainboard FS57 All capacitors are high quality solid capacitors Supports resume after power failure [6] Supports Wake on LAN (WOL) Supports Power on by RTC Alarm Supports boot from USB devices and SD card reader AMI BIOS in 8 MByte EEPROM with SPI interface Supports hardware monitoring and watch dog function Supports Unified Extensible Firmware Interface (UEFI) The firmware supports two boot modes: Legacy BIOS and UEFI</p>
<p><i>Power Adapter</i></p>	<p>External 65 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz, max. 1.6 A Output: 19 V DC, max. 3.42 A, max. 65 W DC Connector: 5.5/2.5mm (outer/inner diameter)</p>
<p><i>Memory</i></p>	<p>4 GB DDR3L-1600 SO-DIMM memory 2x SO-DIMM slots with 204 pins Supports a maximum of 8 GB per DIMM Maximum total size: 16 GB</p>
<p><i>Mini-PCIe Slots</i></p>	<p>Two Mini PCI Express expansion slots: full size and half size 1) the half size slot is occupied by a WLAN module 2) the full size slot supports PCIe 2.0, SATA 3G and USB 2.0 and can either be used for a Mini-PCIe card or for a Mini SATA (mSATA) flash memory card [3] Please use the "Mini-PCIE / mSATA Select" function in the BIOS setup.</p>
<p><i>Audio</i></p>	<p>Audio Realtek® ALC 662 High-Definition Audio Two analog audio connectors (3.5mm) at the back panel: 1) 2 channel line out (head phone) 2) microphone input Digital multi-channel audio output: via HDMI and DisplayPort</p>

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<p><i>Dual Gigabit LAN</i></p>	<p>Dual network with two RJ45 ports Used network chips: 1) Intel i211 Ethernet Controller with MAC, PHY and PCIe interface 2) Intel i218LM PHY connected to the MAC of the processor Supports 10 / 100 / 1.000 MBit/s operation Supports WAKE ON LAN (WOL) Supports network boot by Preboot eXecution Environment (PXE)</p>
<p><i>Wireless Network (WLAN)</i></p>	<p>Built-in Mini-PCIe WLAN card (half size) and internal antenna Single-Chip 1T1R WLAN Controller Realtek RTL8188EE Supports IEEE 802.11b/g/n, max. 150Mbps up-/downstream Security: WPA/WPA2(-PSK), WEP 64/128bit, IEEE 802.11x/i</p>
<p><i>2.5" SSD storage</i></p>	<p>120 GB SSD drive 6.35cm/2.5" format Serial-ATA III interface</p>
<p><i>Card Reader</i></p>	<p>Integrated SD card reader Supports SD, SDHC and SDXC memory flash cards Supports booting from SD card</p>
<p><i>Front Panel Connectors</i></p>	<p>4x USB 2.0 2x RS232 serial ports (5V/12V, 1x switchable to RS422 / RS485) [1] covered with black plastic caps SD card reader (supports SD, SDHC, SDXC) Power button Power LED (blue) HDD LED (yellow)</p>
<p><i>Back Panel Connectors</i></p>	<p>DisplayPort 1.2 [7] HDMI 1.4a 2x USB 3.0 2x Gigabit LAN (RJ45) Microphone input Audio Line-out (headphone) DC-input connector for external power adapter 4-pin connector "SW2" (2.54 mm pitch) for power button, Clear CMOS and 5V DC [4] Perforation for optional Wireless LAN antennas (2 holes)</p>
<p><i>Always-On-Jumper</i></p>	<p>Always-On Jumper: By removing Jumper J7 (please refer to the quick user guide), the system will start unconditionally once power is applied. [6]</p>
<p><i>Onboard Connectors</i></p>	<p>EDP1 - Embedded DisplayPort (eDP, 2x15 pin) [2]</p>

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<p><i>Scope of Delivery</i></p>	<p>Multi-language user guide Two metal feet with four screws M3 x 7 VESA mount for 75/100mm standard (two metal brackets) Four thumbscrews M3 x 5 mm (screws together VESA mount and PC) Four screws M4 x 10 mm (to fix the VESA mount to the external surface) Rack (to mount a 2.5" storage in the bay) with two screws M3 x 4 mm Driver DVD (Windows 8.1 / 8 / 7 for 32- / 64-bit) External power adapter with power cord</p>
<p><i>Environmental Specifications</i></p>	<p>Operating temperature range: 0~40 °C [5] Relative humidity, non-condensing: 10~90%</p>
<p><i>Conformity Certifications</i></p>	<p>EMI: FCC, CE, BSMI, C-Tick Safety: CB, BSMI, ETL, CCC This device is classed as a technical information equipment (ITE) in class B and is intended for use in living room and office. The CE-mark approves the conformity by the EU-guidelines: - EMV-guideline 89/336/EWG electromagnetic tolerance - LVD-guideline 73/23/EWG use of electric devices within certain voltage-limits</p>

Footnote:

[1] Jumper for COM port configuration

Pin 9 of the COM-Port is a multi-functional signal. Based on the Jumper JP1 configuration on the mainboard, it can be configured as Ring Indicator (RI) or external power supply with a voltage level of either 5V or 12V. Each COM port can be configured separately. The operating mode of COM 1 can be set to RS232, RS422 or RS485 in the BIOS. COM 2 supports the RS232 mode only.

[2] The Embedded DisplayPort (eDP) is the successor of the LVDS interface und connects the onboard graphics with a built-in display panel. This port is helpful, if the mainboard is used in a chassis with an integrated panel with known parameters for resolution and refresh rate. The VGA-BIOS must be especially customised by Shuttle for the used panel.

[3] mini-SATA (mSATA) - This is a newer industry standard which converts the electrical SATA interface to the physical "Mini PCI Express" mini card form factor.

[4] Four pin header at the back panel

This header allows for connecting an external power button.

It also provides 5V DC voltage for external devices and the Clear CMOS function.

[5] Remark: no hard disk drive is supported for high ambient temperature over 35°C. **[6] Power on after power fail:**

The BIOS setup provides a "Power-On after Power Fail" function that can be found under "Power Management Configuration". This function determines the PC's behaviour after power failure. As a matter of the nature of this function, it may fail after short power failures. This is why the Shuttle Slim-PC System DS 5700BA also comes with a hardware-based solution. By removing Jumper J7 (please refer to the quick user guide), the system will start unconditionally once power is applied.

[7] How to convert DisplayPort into HDMI/DVI

The DisplayPort output can be converted to HDMI or DVI by an additional, passive adapter cable. For example:

DELOCK 82590: 1m, DisplayPort (male, 20p) to HDMI-A (male, 19p)

DELOCK 82435: 5m, DisplayPort (male, 20p) to DVI-D (male, 24p)

The integrated graphics automatically detects the connected display and puts out the appropriate electric signal - either DisplayPort (without an adapter) or HDMI/DVI (with an adapter). However, a monitor with a DisplayPort connector cannot be connected to the HDMI port with a simple, passive adapter.

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Shuttle DS57 Series – Comparison

Product	Type	Memory	Storage	Operating System	Bar code
DS57U	Barebone	-	-	-	887993000053
DS 5700XA	System	4 GB	120 GB SSD	-	4046047102952
DS 5700BA	System	4 GB	120 GB SSD	Windows 7 Prof. 64 Bit	4046047102945