

Efficient and powerful 3-litre PC

The ultra-compact Shuttle Slim-PC X 8110BA is an ideal choice for a small, but powerful Mini PC with Intel Core i3 processor. Not only is it suitable for a low-noise home-media PC with support of 4K displays, it also meets the requirements towards an office PC and industrial applications. It features two Gigabit-LAN interfaces for server applications and two serial COM ports which are commonly required for connecting many professional devices. Its three digital video outputs allow for operating two displays at the same time. X 8110BA is a power-efficient and reliable system for a wide range of applications. The built-in heatpipe cooling ensures the system runs quietly at maximum stability.

Shuttle Slim-PC System **X 8110BA**

Fixed configuration with Windows 7 Prof.
Available in Black or White



The vertical stand is not included.
Images for illustration purposes only.

Feature Highlights

Slim-Design	<ul style="list-style-type: none"> Based on the Slim-PC Barebone XH81V Slim 3.5 litre chassis, Black or White Dimensions: 23.8 x 20 x 7.2 cm (L/W/H) With front cover flaps Max. operating temperature: 0~45°C
Chipset	<ul style="list-style-type: none"> Intel H81 Chipset
Operating System	<ul style="list-style-type: none"> Windows 7 Professional 64 Bit
Processor	<ul style="list-style-type: none"> Intel Core i3-4160, 3.6 GHz With heatpipe cooling system
Memory	<ul style="list-style-type: none"> 4 GB DDR3-1600 SO-DIMM (max. 16 GB)
Graphics	<ul style="list-style-type: none"> Intel HD graphics 4400 supports UHD / 4K Video outputs: HDMI 1.4 & DisplayPort 1.2
Storage	<ul style="list-style-type: none"> 500 GB hard disk drive in 2.5" format SSD mSATA card upgradable Optical Slimline drive upgradable
Other Connectors	<ul style="list-style-type: none"> 5.1 HD Audio (digital audio via HDMI/DP) 2x USB 3.0 front, 6x USB 2.0 (2 front, 4 rear) Dual Gigabit LAN (RJ45), supports WOL, PXE 2x COM ports (RS232 + RS232/RS422/RS485)
Power Supply	<ul style="list-style-type: none"> External 90W fanless power adapter
Warranty	<ul style="list-style-type: none"> 2 years Pick-up-and-Return Service (PUR)
Applications	<ul style="list-style-type: none"> Home, office, vertical market

X 8100BA Black



X 8100BA White

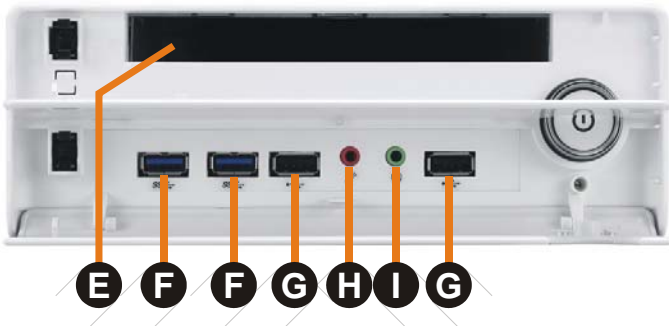


Shuttle Slim-PC X 8110BA – Front and Back Panel



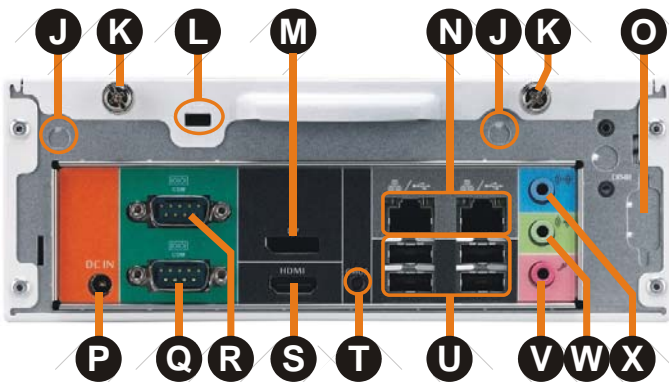
Front Panel

- A Button for accessing the I/O ports
- B Button for accessing the optical drive
- C LED indicator for hard disk activity
- D Power on button with LED
- E 5.25" bay for optical slimline drive (DVD or Blu-ray)
- F 2x USB 3.0 ports
- G 2x USB 2.0 ports
- H Microphone input
- I Headphone output



Back Panel

- J 2x perforation for optional WLAN antennas
- K 2x thumbscrews
- L Hole for Kensington Lock
- M DisplayPort Video/Audio output
- N Dual Gigabit network (RJ45)
- O Perforation for optional VGA-out (D-Sub connector)
- P Connector for power adapter
- Q RS232 / RS422 / RS485 serial interface (COM)
- R RS232 serial interface (COM port)
- S HDMI Video/Audio output
- T Clear CMOS button
- U 4x USB 2.0
- V Microphone input
- W Headphone / line-out
- X Audio line-in



COM port Pin 9 Configuration

Pin 1 is a multi-functional signal. Based on Jumper 3 configuration on the mainboard, it can be configured as Ring Indicator (RI) or external power supply with either 5V or 12V voltage level (each COM port separately).

Product range based on XH81V

Name	Version	Windows	Processor	RAM	Storage	Bar Code
XH81 Black [1]	Barebone	–	–	–	–	811686006817
XH81V Black	Barebone	–	–	–	–	811686006770
XH81V White	Barebone	–	–	–	–	887993000107
X 8110B	BTO System	selectable	selectable	selectable	selectable	–
X 8110XA Black	Fixed System	–	Core i3-4160	4GB DDR3	500GB HDD	4046047103003
X 8110XA White	Fixed System	–	Core i3-4160	4GB DDR3	500GB HDD	4046047103010
X 8110BA Black	Fixed System	Win 7 Prof	Core i3-4160	4GB DDR3	500GB HDD	4046047102983
X 8110BA White	Fixed System	Win 7 Prof	Core i3-4160	4GB DDR3	500GB HDD	4046047102990

[1] XH81 is a special version with open front (without front doors)

Optional Accessories for X 8110BA



Vertical Stand (PS01)

The X 8110BA is to be used in horizontal operation by default. The optional stand PS01 allows to be used in upright position also.



VESA75/100-mount (PV02)

The optional VESA mount allows it to be installed on to walls or affixed to the rear side of a monitor.



VGA-Port Adapter (PVG01)

Optional D-Sub VGA Video Output



WLAN-Kit (WLN-S)

Wireless LAN adapter with two external antennas supports IEEE 802.11b/g/n at max. 300 Mbit/s.



3.5" Hard Disk Rack (PHD4)

PHD4 allows for installation of one 3.5" hard drive. However doing so means no other drives such as a slimline DVD drive or a 2.5" HDD/SSD can be used.



Drive bay cover (MY01)

Cover for the slimline drive bay.
Please contact Shuttle for "Mylar POI-MY01". [7]

Connectivity / Applications

The X 8110BA wealth of ports qualifies it for a wide range of applications and external devices.



The X 8110BA is your powerful 3.5-litre Slim-PC solution for high performance driven applications, e.g.:

- Digital Signage
- In-store Audio/Video entertainment
- Gambling
- Home-Media
- Office
- Call Centre
- Education
- Kiosk
- Point of Sales (POS)
- Medical
- Automation
- Small server

Shuttle Slim-PC X 8110 – Product Features



The 3.5-litre chassis - a clean and modern look

Shuttle has always placed great emphasis on the interior and exterior aesthetics of their Mini-PCs with the belief that a good blend of style and form factor allow the Mini-PC to be attractive, versatile and work well in almost any environment. And the X 8110BA was designed just like that and shines in a clean and modern appearance. The optical drive bay and front panel connectors are covered by front doors. This tiny tot barely stands 7.3 cm in height with a volume of 3.5 litres.



Low noise thanks to heatpipe cooling system

An active dual-fan heatpipe cooling system ensures whisper-quiet operation and system stability. A heatpipe is a hollow tube containing a heat transfer liquid. As the liquid evaporates, it carries heat to the cool end, where it condenses and then returns to the hot end. Heatpipes thus have a much higher effective thermal conductivity than solid materials. Please keep the vent holes clear.



Energy-saving

The power consumption mainly depends on the processor used and its load. If an Intel Core i3-4130 (3,4 GHz, TDP = 54W) processor is installed, the system consumes about 17W in idle mode. Under full load, the power consumption is 58W.

Note: the maximum output wattage of the power adapter is specified with 90W. Assuming the adapter's efficiency is 90%, the input wattage can reach up to 100W.



Extended temperature range and reliability

The X 8110BA is outstandingly robust thanks to its tough chassis, and with an operating temperature range of 0-50 °C it is suitable for use in the most demanding environments. Designed entirely using all solid capacitors, X 8110BA is guaranteed to deliver maximum stability, reliability and longer system lifetime for long-term applications like digital signage.

Caution: for high ambient temperature over 40°C we recommend to use Solid State Disks (SSDs) instead of Hard Disk Drives (HDDs).



Great Connectivity

On the front, elegantly hidden from view behind drive doors, the panel reveals four USB ports two of which being USB 3.0. There are also two 3.5mm jacks for headphone and microphone. In addition, the back panel offers a wide range of I/O connectivity as well.



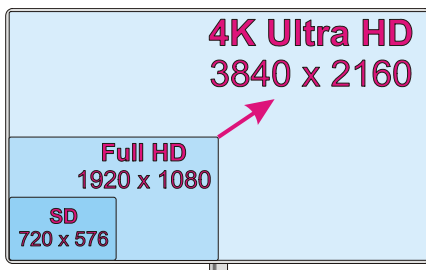
Dual Gigabit LAN Network

Today's media-rich communications across the internet and within enterprises create need for bandwidth. This is why Shuttle applies Gigabit-LAN performance to their Mini PCs and X 8110BA even supports two of them. Dual networking allows the computer to connect to a single network using two cables at once with an appropriate switch (teaming mode with load balancing or failover function) or to two different networks depending on the needs of the user.



Dual Display with HDMI and DisplayPort (optional VGA)

The X 8110BA features two digital video outputs: HDMI 1.4 and DisplayPort 1.2. 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. Furthermore, the X 8110BA supports an optional D-Sub/VGA port. [2],[6]



Supports 4K Ultra HD at 60Hz

The X 8110BA supports one display running at 4K (3840 x 2160 / 2160p) high resolution when connected to its DisplayPort video output. As the successor to the Full HD standard, Ultra HD delivers a four times higher resolution with a wider colour space and colour depth.



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 industrial applications. The X 8110BA features two serial RS-232 ports which also support both 5 or 12V auxiliary voltage. The lower COM port also supports the RS422 and RS485 standard.



Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. (The lock-and-cable are not included)



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 or (3) keep system turned off. As a matter of the nature of this function, it may fail after short power failures. This is why the X 8110BA also comes with a hardware-based solution. By removing Jumper 4 (see image) the system will start unconditionally once power is applied.

Shuttle Slim-PC X 8110BA Specifications

<i>Warranty</i>	24 months Pick-Up-And-Return
<i>Chassis</i>	<p>Slim X-type chassis, colour: black or white</p> <p>Dimensions: 240 x 200 x 72 mm (LWH) = 3.5 litres</p> <p>Hole for Kensington Lock at the back panel</p> <p>Operation position horizontal or even vertical with the optional stand PS01</p> <p>Front doors for optical drive and front panel connectors</p>
<i>Operation Systems</i>	<p>Windows 7 Professional 64 bit</p> <p>Several languages available</p>
<i>Processor</i>	<p>Intel Core i3- 4160 processor</p> <p>Intel Core processor of the fourth generation ("Haswell")</p> <p>Dual Core plus Hyper Threading</p> <p>Socket LGA1150, 22 nm process technology</p> <p>Clock frequency: 3.6 GHz</p> <p>Intel Smart Cache: 3 MB</p> <p>Thermal Design Power (TDP): 54W</p> <p>Supports VT-x with EPT, 64 bit, SpeedStep, AES-NI</p>
<i>Heatpipe Cooling</i>	Processor cooling with heat-pipe technology and two fans (6cm)
<i>Memory</i>	<p>4 GB DDR3-1600 SO-DIMM memory built-in</p> <p>Maximum supported capacity: 16 GB</p>
<i>Hard Disk</i>	500 GB hard disk drive, 2.5" format, Serial ATA 6G interface
<i>Optional ODD drive</i>	Optional configureable with a DVD or Blu-ray drive in 5.25" slimline form factor
<i>Mainboard Chipset</i>	<p>Mainboard / Chipset / BIOS</p> <p>Mini-ITX form factor 17 x 17 cm, 8 layer design</p> <p>Chipset: Intel® H81 Chipset</p> <p>(Intel DH82H81 PCH, code name "Lynx Point")</p> <p>AMI BIOS in 8 Mbit EEPROM with SPI interface</p> <p>All capacitors are high quality solid capacitors</p> <p>Supports hardware monitoring and watch dog functionality</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p> <p>Supports power on after power failure [1]</p>

<p><i>Integrated Graphics</i></p>	<p>Intel HD Graphics 4400 Graphics core clock frequency: 350~1150 MHz Supports DirectX 11.1, OpenGL 4.3, Quick-Sync-Video Supports Dual-Independent-Display at Full HD 1080p resolution Supports Blu-ray (BD) playback with HDCP Supports 4K Ultra HD resolution at 3840 x 2160 via DisplayPort (2160p/60Hz) and HDMI (2160p/30Hz) [6] HDMI and DisplayPorts support HD video plus multi-channel digital audio via a single cable Optional D-Sub/VGA connector [2]</p>
<p><i>Audio</i></p>	<p>Audio Realtek® ALC 662 5.1-channel High-Definition Audio Three analog audio connectors (3.5mm) at the back panel: 1) Front line-out (head-phone) 2) Rear Surround line-out (shared with microphone input) 3) Center line-out (shared with line-in) Digital audio output is provided via HDMI and DisplayPort</p>
<p><i>Dual Gigabit LAN Controller</i></p>	<p>Dual Realtek 8111G Ethernet network controller (Gigabit) Supports 10 / 100 / 1.000 MBit/s operation Two RJ45 ports (dual network) support Teaming [4] Supports WAKE ON LAN (WOL) Supports network boot by Preboot eXecution Environment (PXE)</p>
<p><i>Front Panel Connectors</i></p>	<p>Microphone input Audio Line-out (headphone) 2x USB 3.0 2x USB 2.0 Power button Power LED (blue) HDD LED (yellow)</p>
<p><i>Back Panel Connectors</i></p>	<p>DisplayPort 1.2 audio/video output HDMI 1.4 audio/video output 4x USB 2.0 2x GigaBit LAN (RJ45) [4] 2x RS232 serial ports (5V/12V, 1x switchable to RS422 / RS485) Audio Line-in Audio Line-out Audio Mic-in Clear CMOS Button Hole for Kensington Lock</p>
<p><i>Power adapter</i></p>	<p>External 90 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz Output: 19 V DC, 4.74 A, max. 90 W DC Connector: 5.5/2.5mm (outer/inner diameter)</p>
<p><i>Optional Accessories</i></p>	<p>(1) Vertical stand (PS01) (2) VESA mount (PV02) (3) D-Sub VGA video output (PVG01) [2] (4) WLAN module (WLN-S) [5] (5) Graphics port adapter: HDMI-DVI, DisplayPort-HDMI, DisplayPort-DVI</p>

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<i>Environmental Specification</i>	Operating temperature range: 0~50°C Relative humidity range: 10~90% (non-condensing)
<i>Environmental spec</i>	Operating temperature range: 0~45°C Relative humidity range: 10~90% (non-condensing)
<i>Conformity and Certifications</i>	EMI: FCC, CE, BSMI, C-Tick Safety: CB, BSMI, ETL Others: RoHS, Energy Star V5.0, EuP Lot 6 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/EEG electromagnetic tolerance - LVD-guideline 73/23/EEG use of electric devices within certain voltage-limits

[1] 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 or (3) keep system turned off. As a matter of the nature of this function, it may fail after short power failures. This is why this PC also comes with a hardware-based solution. By removing Jumper 4 (on the mainboard near the "Shuttle" imprint), the system will start unconditionally once power is supplied.

[2] Optional D-Sub/VGA connector

The mainboard features one analog graphics connector. This 15-pin D-Sub VGA connector can be lead to the outside of the backpanel by using the optional adapter PVG01. However, you can use not more than two displays at the same time.

[3] mini-SATA (mSATA)

mSATA, not to confuse with "micro SATA", is a newer industry standard that converts the electrical SATA interface (1.5 or 3.0 Gbit/s) to the physical "Mini PCI Express" mini card form factor.

[4] Teaming Mode

The teaming function allows for grouping both available network adapters to have them work as one single adapter to create a virtual LAN. The benefit of this is that it enables load balancing and failover.

[5] Optional Wireless LAN module:

This Slim PC supports an optional WLAN module which consists of a half-size Mini-PCIe card with IEEE 802.11n functionality and an external antenna with an appropriate antenna cable. Shuttle offers a suitable accessory kit "WLN-S" with two antennas to increase WLAN range.

[6] 4K Ultra-HD resolution

A 4K-display with Ultra-HD resolution (3840 x 2160) should be connected via DisplayPort, as only this port supports a higher refresh rate of 60Hz. Certain displays (e.g. Dell UP2414Q) however require MST mode (Multi-Stream Transport) to be enabled which sends two separate images at half resolution each to the display. These two images are then combined and put in correct order by the Intel graphics driver when in Collage mode. Please note that HBR2-mode (High Bit Rate 2) must be supported by each display to have two of them run at 4K resolution.

The video playback performance depends on the video format, bit rate and the processor used. Daily office applications usually won't require the system to run under full load, however for smooth 4K (2160p) video playback requirements are different. An [Intel Core i3 processor or higher is required here](#), since the performance of the integrated graphics engine of a Celeron or Pentium processor might not suffice.