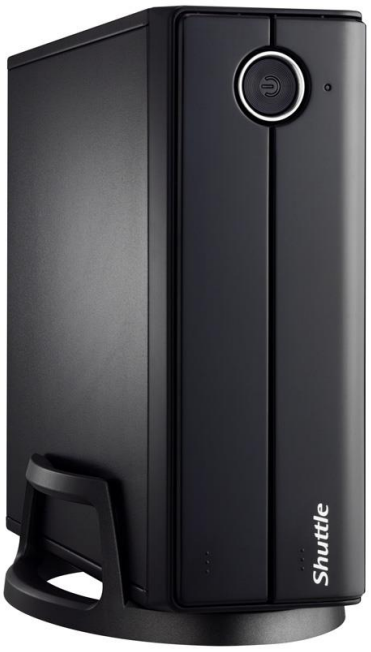
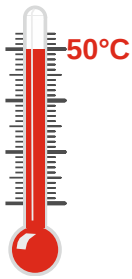
Efficient and powerful 3-litre PC

The ultra-compact XPC slim Barebone XH170V is an ideal basis for a small, but powerful Mini PC. 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 allows for operating three displays at the same time, features an Intel network chip and a useful "Always-on-Jumper" for auto-start after power-fail. In a team with 14nm socket LGA1151 Intel "Skylake" or „Kaby Lake“ processor and a SSD drive the XH170V makes for 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.

XPC slim Barebone
XH170V





Feature Highlights

Slim-Design	• Slim 3.5 litre chassis, black • Dimensions: 24 x 20 x 7.2 cm (L/W/H) • Bays: 2x 6.35cm/2.5” for hard disks or SSDs and 1x optical slimline drive • Max. operating temperature: 0~50°C
Processor	• Supports LGA 1151 Skylake or Kaby Lake processors up to a max. TDP of 65W [11] • Supports Core i7 / i5 / i3, Pentium, Celeron • Including heatpipe cooling system
Operating System	• This system comes without operating system. • Supports Windows 7 / 8.1 / 10, Linux 64 bit Win. 7/8.1 not supported w/ Kaby Lake CPU
Chipset	• Intel H170 Chipset
Memory	• 2x 204-pin SO-DIMM slots • Supports DDR3L-1333/1600, max. 2x 16 GB
Graphics	• Integrated Intel HD graphics supports 4K Ultra HD (Core i3 or higher required) • Supports three independent displays
Drive Connectors	• 3x Serial ATA max. 6 Gbps, supports RAID • Two pre-installed SATA cables (HDD+ODD)
Other Connectors	• HDMI + 2x DisplayPort video outputs • 5.1 HD Audio (digital audio via HDMI/DP) • 4x USB 3.0, 4x USB 2.0 (each 2 front, 2 rear) • Gigabit LAN (RJ45), COM (RS232), eSATA
Mini-Slots	• Mini PCI Express (Half-Size) • M.2 2280 Slot supports SATA SSDs
Optional Accessories	• Vertical stand (PS01), 3.5” HDD rack (PHD4) • VESA mount (PV02), WLAN kit (WLN-S) • Mylar cover for the DVD bay (MY01)
Power Supply	• External 90W fanless power adapter
Applications	• Home, office, vertical market

Images for illustration purposes only.
The vertical stand is available optionally.

8 87993 00044 2

www.shuttle.eu

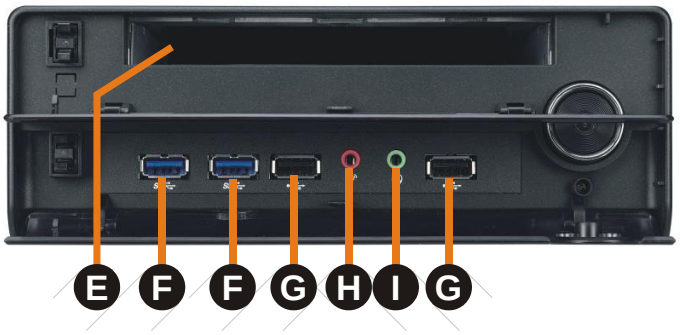
Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Shuttle XPC slim Barebone XH170V – Front and Back Panel

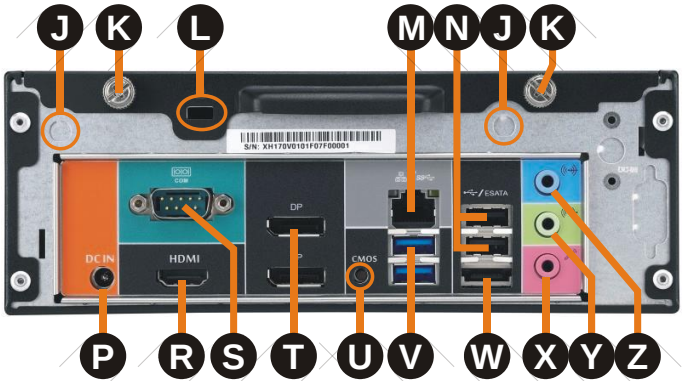
Front Panel

- **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 port
- **G** 2x USB 2.0 port
- **H** Microphone input
- **I** Headphone output



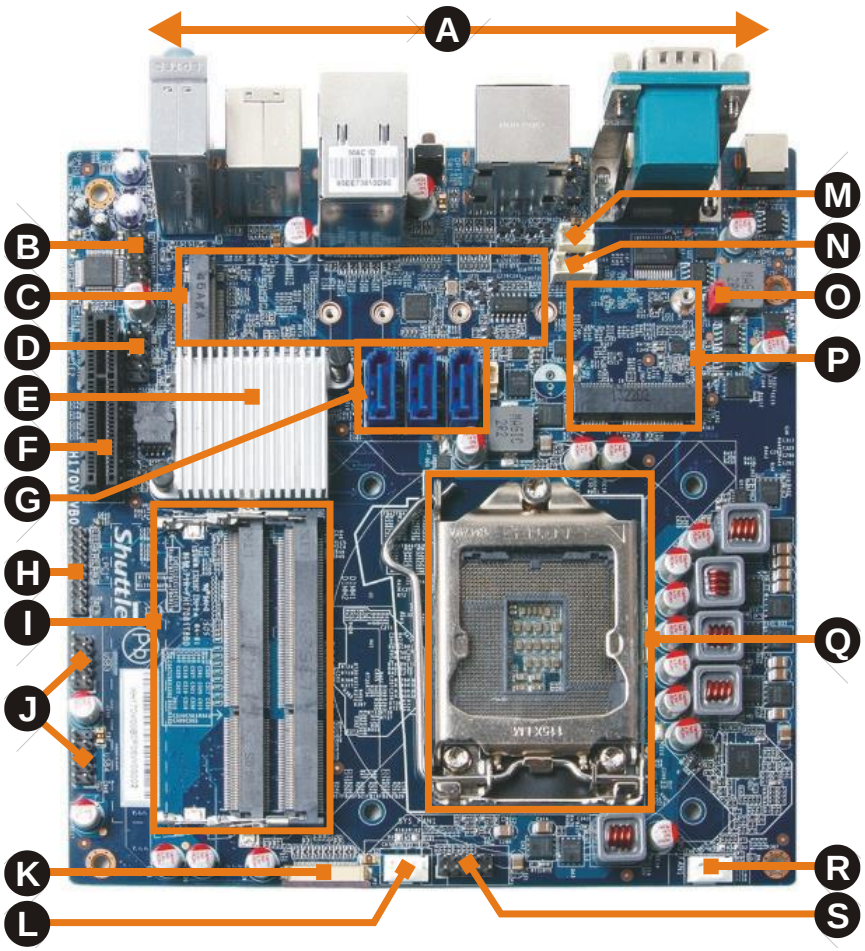
Back Panel

- **J** 2x perforation for optional WLAN antenna
- **K** 2x thumbscrew
- **L** Hole for Kensington Lock
- **M** Gigabit network (RJ45)
- **N** 2x USB 2.0
- **P** Connector for power adapter
- **R** HDMI Video/Audio output
- **S** RS232 serial interface (COM port)
- **T** 2x DisplayPort Video/Audio output
- **U** Clear CMOS button
- **V** 2x USB 3.0
- **W** External Serial ATA
- **X** Microphone input
- **Y** Headphone / line-out
- **Z** Audio line-in



Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Shuttle XPC slim Barebone XH170V – Mainboard



- **A** Back panel (rear side)
- **B** Front Audio Header
- **C** M.2 2280 Expansion Slot for SATA SSDs
- **D** USB 2.0 Header
- **E** Intel H170 Chipset
- **F** PCI-Express X4 Slot (cannot be used)
- **G** 3x Serial ATA 6G
- **H** LPC-Slot
- **I** 2x SO-DIMM Slot
- **J** Two USB 2.0 Header
- **K** Connector for Front USB 3.0 Port (FCC)
- **L** Fan Connector (System)
- **M** SATA Power 12V
- **N** SATA Power 5V
- **O** Always-On-Jumper JP4
- **P** Half-Size Mini-PCIe expansion slot
- **Q** LGA1151 CPU Socket
- **R** Fan Connector (CPU)
- **S** Connector for Front Buttons and LED‘s

Supports three drives

The Shuttle XPC slim Barebone XH170V supports one optical drive in 5.25” slimline format and two 2.5” drives (e.g. 2.5” hard disk and 2.5” SSD). The second 2.5” drive requires an additional SATA cable and mounting screws which is not included. The storage drives (hard disk and optical drive) are not included in the delivery of the XH170V. **Notice:** for high ambient temperatures over 40°C we strongly recommend to use SSDs instead of hard disk drives.

www.shuttle.eu

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Optional Accessories for Shuttle XPC slim Barebone XH170V

Vertical Stand (PS01)

The Shuttle XPC slim Barebone XH170V is to be used in horizontal operation by default. The optional stand PS01 allows it to be used in upright position also.

VESA 75/100 mount (PV02)

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

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 one 2.5" HDD/SSD, can be used.

Drive Bay Cover

Cover for the slimline drive bay.
Please contact Shuttle for "Mylar POI-MY01". [6]

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Connectivity / Applications

The Shuttle XPC slim Barebone XH170V's wealth of ports qualifies it for a wide range of applications and external devices.

The XH170V is your powerful 3.5-litre Slim PC solution for high performance driven applications, e.g.:

- Digital Signage (supports 4K resolution)
- In-store Audio/Video entertainment
- Gambling
- Home-Media
- Office
- Call Centre
- Education
- Kiosk
- Point of Sales (POS)
- Medical
- Automation
- Small Server

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Shuttle XPC slim Barebone XH170V – 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 Shuttle XPC slim Barebone XH170V was designed just like that and shines in a clean and modern appearance. The optical drive and front panel connectors are elegantly concealed behind drive doors to provide maximum protection. This tiny tot barely stands 7.3 cm in height with a volume of 3.5 litres.

What does Barebone mean?

The Shuttle XPC slim Barebone XH170V consists of a stylish case with pre-installed mainboard, cooling system and external power adapter. Despite its small form factor, it offers outstanding connectivity, functionality and performance. For a complete Mini-PC system, a few components still need to be added. The Mini-PC is customisable and takes socket LGA1151 processors (TDP max. 65W), DDR3L SO-DIMM memoy, one slimline SATA optical drive and one 2.5" hard disk (or SSD). Once the desired operation system is installed, the XH170V is ready to use. Moreover, the system comes with pre-routed cables to reduce clutter, increase airflow and ease component installation.

Supports Intel 14nm Skylake & Kaby Lake Processors

Skylake and Kaby Lake are the codenames for Intel's 6th and 7th Generation of Intel Core Processors introduced in 2015 along with the 100 Series chipsets. The XPC slim Barebone XH170V supports the desktop version with socket LGA1151 (TDP max. 65W), while the previous generation (LGA1150) is not compatible.

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 liquid to transfer heat. As the liquid evaporates, it carries heat to the cool end, where it condenses and then runs back to the hot end. Heatpipes thus have a much higher effective thermal conductivity than solid materials. Please keep the vent holes clear.

Extended temperature range and reliability

The Shuttle XPC slim Barebone XH170V is outstandingly robust thanks to its tough alu chassis, and with an operating temperature range of 0-50°C it is suitable for use in the most demanding environments. Designed entirely with all solid capacitors, XH170V is guaranteed to deliver maximum stability, reliability and longer system lifetime for long-term applications like digital signage.
Notice: for high ambient temperature over 40°C we recommend to use Solid State Disks (SSDs) instead of Hard Disk Drives (HDDs).

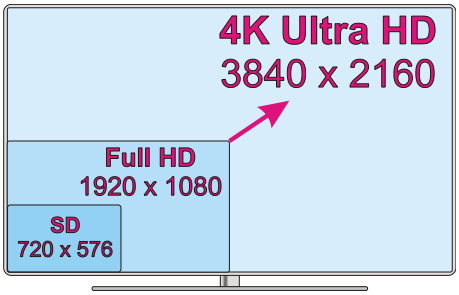
Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Great Connectivity

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

Triple Display with HDMI and 2x DisplayPort

The Shuttle XPC slim Barebone XH170V features three digital video outputs: one HDMI 1.4 and two DisplayPorts 1.2. Triple View technology offers multiple display support on up to three separate monitors. This helps improve on productivity by allowing for spreading multiple windows across two monitors while working with them simultaneously.



Supports 4K Ultra HD at 60Hz

The XH170V supports displays running at 4K (3840 x 2160 / 2160p) high resolution when connected to its DisplayPorts video outputs. As the successor to the Full HD standard, Ultra HD delivers a four times higher resolution with a wider colour space and colour depth.
An Intel Core i3 processor or higher is recommended for smooth 4K (2160p) video playback.

One serial port

Many PCs do not have these legacy ports any longer, since they have been superseded and replaced by USB for most consumer appli-cations, but they are still commonly used for applications such as industrial automation systems, scientific analysis, POS systems and other industrial applications. The Shuttle XPC slim Barebone XH170V features one serial RS-232 port.

Two Mini-Slots: Mini PCI-Express and M.2

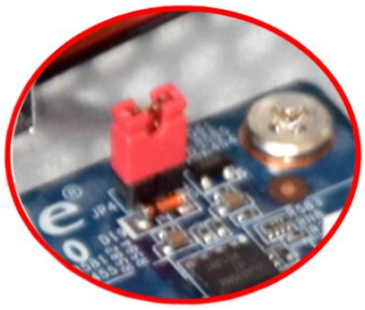
The **Half-Size Mini-PCI-Express slot** is intended for Wireless LAN adapter cards (e.g. the Shuttle Accessory WLN-C) – as shown in the picture on the left.

The **M.2 slot (type 2280)** is equipped with SATA 3.0 interface. Type 2280 means, it supports the usual M.2 cards with a width of 22mm and a length of 80mm, but also 2230, 2242 and 2260 standard cards are supported.

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. (Lock and cable 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 Shuttle XPC slim Barebone XH170V also comes with a hardware-based solution. By removing Jumper 4 (see image) the system will start unconditionally once power is applied.

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Comparison of the 3-litre XPC slim Barebones

Barebone Model	XH81 / XH81V	XH97V	XH110 / XH110V	XH170V
Availability	September 2014	October 2014	Q1 / 2016	September 2015
Supported Processors	4. Gen. Intel Core Processors, LGA1150 "Haswell", TDP max. 65W		**6th/7th Gen.** Intel Core Processors, LGA1151 **"Skylake" & "Kaby Lake",** TDP max. 65W	
Operating System	Windows 7, 8.1, 10 & Linux – 64 bit		Windows 7, 8.1, 10 & Linux – 64 bit „Kaby Lake" CPU does not support Windows 7/8.1	
Chipset	Intel H81	Intel H97	**Intel H110**	**Intel H170**
Memory (max.)	2x 8 GB DDR3-1600, SO-DIMM (204 pins)		**2x 16 GB** DDR3**L**-1600, SO-DIMM (204 pins)	
Multi-Monitoring	max. 2 displays	max. 3 displays	max. 2 displays	max. 3 displays
Mini-Slots	Mini-PCIe (mSATA) Mini-PCIe (for WLAN)	Mini-PCIe (mSATA) Mini-PCIe (for WLAN)	**M.2-2280** (PCIe, SATA) **M.2-2230** (for WLAN)	**M.2-2280** (SATA) **Mini-PCIe** (for WLAN)
Front Panel Connectors	Power-Button, Power-LED, HDD-LED 2x USB 2.0, 2x USB 3.0, 2x Audio		Power-Button, Power-LED, HDD-LED 2x USB 2.0, 2x USB 3.0, 2x Audio	
Back Panel Connectors	1x HDMI 1.4 1x DisplayPort 1.2	1x HDMI 1.4 **2x** DisplayPort 1.2	1x HDMI 1.4 1x DisplayPort 1.2	1x HDMI 1.4 **2x** DisplayPort 1.2
	4x USB2.0	2x USB3.0, 2x USB2.0	2x USB3.0, 2x USB2.0	2x USB3.0, 2x USB2.0
	2x GigaBit LAN	1x GigaBit LAN	**2x** GigaBit LAN	1x GigaBit LAN
	2x COM (RS232)	1x COM (RS232)	**2x** COM (RS232)	1x COM (RS232)
	3x Audio	3x Audio	3x Audio	3x Audio
	–	1x eSATA (3G)	PS/2 Port (Combo)	1x eSATA (3G)
	Clear CMOS Button	Clear CMOS Button	Clear CMOS Button	Clear CMOS Button
Perforations	2x WLAN antenna 1x Kensington Lock 1x VGA adapter	2x WLAN antenna 1x Kensington Lock	2x WLAN antenna 1x Kensington Lock 1x VGA adapter	2x WLAN antenna 1x Kensington Lock
Optional Accessories Note: PVG01 and H-RS232 cannot be used simultaneously.	Vertical Stand (PS01)	Vertical Stand (PS01)	Vertical Stand (PS01)	Vertical Stand (PS01)
	VESA mount (PV02)	VESA mount (PV02)	VESA mount (PV02)	VESA mount (PV02)
	WLAN-Kit (WLN-S/-P)	WLAN-Kit (WLN-S/-P)	WLAN-Kit (**WLN-M**)	WLAN-Kit (WLN-S/-P)
	3.5" HDD rack (PHD4)	3.5" HDD rack (PHD4)	3.5" HDD rack (PHD4)	3.5" HDD rack (PHD4)
	ODD bay cover (MY01) (for **XH81V** only)	Cover/Mylar for the slimline bay (MY01)	ODD bay cover (MY01) (for **XH81V** only)	Cover/Mylar for the slimline bay (MY01)
	3x COM-Ports (PCM3) (for **XH81** only)	–	–	–
	1x COM-Port (H-RS232)	1x COM-Port (H-RS232)	1x COM-Port (H-RS232)	1x COM-Port (H-RS232)
	VGA adapter (PVG01)	–	VGA adapter (PVG01)	–

← Front Views →

XH81V / XH110V (Cover)

XH81V White

XH81 (Open Front)

← Rear Views →

XH81, XH81V

XH110, XH110V

XH97V, XH170V

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Shuttle XPC slim Barebone XH170V - Specifications

Chassis	Slim 3-litre chassis, colour: black Dimensions: 240 x 200 x 72 mm (LWH) = 3.5-litre Weight: 2.2 kg net, 3.5 kg gross Covers for optical drive and front panel connectors Hole for Kensington Lock at the back panel Operation position horizontal or even vertical with the optional stand PS01
Storage Bays	This system features three drive bays: **1)** supports one optical drive (ODD) in 5.25" slimline format with max. 12.7 mm height - this bay can alternatively be used for a 2.5" drive **2)** upper 2.5" bay supports one 2.5" drive with max. 12.7 mm height **3)** lower 2.5" bay supports one 2.5" drive with max. 9.5 mm height The system includes the following pre-installed cables: - 2x Power cables for 2.5" drives (5 Volt [9]) - 1x SATA cable for one 2.5" drive - 1x combo connector (SATA and power) for an optical slimline drive (DVD or Bluray) Important note: This system is ready for one 2.5" drive (SSD or hard disk) and one DVD/Blu-ray drive in slimline format to be installed. For further 2.5" drives, additional SATA cables and screws are required. For a possible third 2.5" drive, also a Y power cable is required. (All not included)
Operation System	This system comes without operating system. It is compatible with Windows 10 / 8.1 / 7 and Linux.- 64 bit. Note: Windows 7 and 8.1 is only supported in combination with the 6th generation Intel Core processors "Skylake". Additional note on Windows 7 see [10]
Mainboard *Chipset* *BIOS*	Mainboard FH170V, Mini-ITX form factor 17 x 17 cm, 8 layer design Chipset: Intel® H170 Chipset (Intel® DH82H170 PCH, Codename "Sunrise Point") AMI BIOS in 8 Mbit EEPROM with SPI interface All capacitors are high quality solid capacitors Supports hardware monitoring and watch dog functionality Supports Unified Extensible Firmware Interface (UEFI) Supports power on after power failure [1]
Power Adapter	External 90 W power adapter (fanless) Input: 100~240 V AC, 50/60 Hz Output: 19 V DC, max. 4.74 A, max. 90 W output wattage AC Connector with protective-earth contacts, cable length: 1.7m DC Connector: 5.5 / 2.5mm (outer/inner diameter)

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Processor Support	Socket LGA 1151 (H4) supports Intel Core i7 / i5 / i3, Pentium and Celeron processors - 6th generation, code name "Skylake" - 7th generation, code name "Kaby Lake" [11] Maximum supported processor power consumption (TDP) = 65W 14nm process technology, up to 8 MB of L3 cache Not compatible with Intel Xeon E3 V5 processors for socket LGA1151 and processors with the older Socket LGA 1150. Does not support the unlock-function of Intel K-Series processors. The processor integrates PCI-Express, memory controller and the graphics engine on the same die (performance features depending on processor type) Please refer to the support list for detailed processor support information at global.shuttle.com.
Heatpipe Cooling	Processor cooling with heatpipe technology and two fans (6cm)
Memory Support	2x SO-DIMM slots with 204 pins Supports DDR3L-1333/1600 (PC3-10600/12800) SDRAM at 1.35V Supports maximum total size of 32 GB (max. 16 GB per module) Supports Dual Channel mode Supports two unbuffered DIMM modules (no ECC) Notice: This mainboard does only support 1.35V DDR3L memory modules. DDR3L has a lower operation voltage compared to DDR3. The maximum memory clock rate depends on the processor type.
Integrated Graphics	The features of the integrated graphics function depend on the processor type used. Three digital video outputs: 2x DisplayPort 1.2 and 1x HDMI 1.4 - supports three independent displays simultaneously [3] - supports Full HD resolution at 1920x1200 (1080p/60Hz) - supports 4K Ultra HD resolution at 3840x2160 via DisplayPorts (2160p/60Hz) and HDMI (2160p/30Hz) [5] - supports Blu-ray (BD) playback with HDCP - supports HD video plus multi-channel digital audio via a single cable
Audio	Audio Realtek® ALC 662 5.1-channel High-Definition Audio Three analog audio connectors (3.5mm) at the back panel: 1) Front line-out (headphone) 2) Rear Surround line-out (shared with microphone input) 3) Center line-out (shared with line-in) Digital audio output is provided by HDMI and DisplayPort.
Gigabit LAN Controller	Intel i219LM PHY connected to the MAC of the processor Supports 10 / 100 / 1.000 MBit/s operation Supports WAKE ON LAN (WOL) and network boot by Preboot eXecution Environment (PXE)

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

M.2 Slot	M.2 2280 slot with SATA v3.0 (6 Gbps) interface It supports M.2 cards with a width of 22 mm and a length of 30, 42, 60 or 80 mm (type 2230, 2242, 2260, 2280). It supports M.2 SATA SSDs (with B+M key), but no M.2 PCIe SSDs.
Mini PCIe Slot	Mini-PCIe Half-Size slot with PCIe 2.0 and USB 2.0 interface supports one optional Wireless Network (WLAN) card
Drive Connectors	3x Serial-ATA connector, max. 6 Gbps 1x external Serial-ATA (eSATA), max. 3 Gbps 1x M.2 SSD (M.2 slot) Supports RAID 0, RAID 1 Supports Intel® Rapid Storage Technology 13 (RST) Supports NCQ, AHCI and Hot Plug Note: The package includes pre-installed cables (for SATA and power) and mounting screws for one 2.5" drive and one for one optical slimline drive.
Front Panel Connectors	Microphone input Audio Line-out (headphone) 2x USB 3.0 2x USB 2.0 Power button Power LED (blue) HDD LED (yellow)
Back Panel Connectors	2x DisplayPort 1.2 audio/video output [2] HDMI 1.4 audio/video output 2x USB 3.0, 2x USB 2.0 GigaBit LAN (RJ45) RS232 serial port External Serial ATA (eSATA 3G) Audio Line-in, Audio Line-out, Audio Mic-in Clear CMOS Button Perforation for Wireless LAN antennas (2 holes) Hole for Kensington Lock
Other Onboard Connectors	Power on after power fail (hardware solution, Jumper 4) [1] Front connectors for power button, LEDs, USBs, audio ports Three headers 2x5-pin for dual USB 2.0 (one occupied) Two 4-pin fan connector (one occupied by the CPU cooling system) LPC interface (2x10-pin header, 2mm pitch)
Supplied Accessories	Multi-language installation guide (EN, DE, FR, ES, JP, KR, SC, TC) Driver DVD Pre-installed SATA and power cables for one 2.5" drive and one slimline drive External power adapter with 1.7m AC power cord (with protective earth contacts) Protector cap for the CPU socket (do not use, if heatpipe or fan is mounted) CPU heatpipe cooling system with heatsink compound Bag with screws
Environmental Specifications	Operating temperature range: 0~50°C [7] Relative humidity range: 10~90% (non-condensing)

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Optional Accessories	(1) Vertical stand (PS01) (2) VESA mount (PV02) (3) WLAN module (WLN-S) [4] (4) Cover for slimline drive bay [6] (5) 3.5" Hard Disk Rack (PHD4) [8]
Conformity and Certifications	EMI: FCC, CE, BSMI, C-Tick Safety: ETL, CB, BSMI Other: RoHS, Energy Star, ErP 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 directives: (1) 2004/108/EC relating to electromagnetic compatibility (EMC), (2) 2006/95/EC relating to Electrical Equipment designed for use within certain voltage limits (LVD), (3) 2009/125/EC relating to ecodesign requirements for energy-related products (ErP)

Notes:

[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 the Shuttle XPC slim Barebone XH170V also comes with a hardware-based solution. By removing Jumper 4 (on the mainboard near the "Shuttle" print), the system will start unconditionally once power is supplied.

[2] How to convert DisplayPort into HDMI/DVI

The DisplayPort outputs 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 through 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.

[3] Three independent displays simultaneously

The Shuttle XPC slim Barebone XH170V supports a maximum of two displays with a DVI or HDMI input. A third digital display, if required, must be connected directly to the DisplayPort output (without an adapter).

[4] Optional Wireless LAN module: - This XPC slim Barebone 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.

[5] 4K Ultra HD resolution

A 4K display with Ultra HD resolution (3840x2160) should only 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, bitrate 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 is not sufficient.

[6] Optional accessory: Drive bay cover

If the Shuttle XPC slim Barebone XH170V is used without an optical slimline drive, this cover helps close the open bay which can be particularly important in public institutions to avoid dust on the inside and objects being inserted inappropriately. Please contact Shuttle for the optional accessory "Mylar POI-MY01".

[7] High ambient temperature

For high ambient temperatures over 40°C we strongly recommend to use SSDs instead of hard disk drives.

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

[8] The optional accessory 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.

[9] Power connector for SATA drives

The supplied power cables for SATA drives provide a voltage of 5V. In very rare cases a 2.5" hard disk may require a 12V line. This is not supported as standard. An adapter such as one that is supplied with the PHD4 will help.

[10] Installation of Windows 7 - Intel® 100 chipset series has removed their support for the Enhanced Host Controller Interface (EHCI) which is the driver software for the USB 2.0 ports. The new chipset only supports the updated Extensible Host Controller Interface (xHCI for USB 3.0) which is not supported by the original Windows 7 installation disk. This means, that peripheral devices connected by USB (like keyboard, mouse and external optical drive) do not work during the Windows 7 Installation. As a solution please add the required USB 3.0 drivers to the Windows 7 installation files - this procedure is explained in the Shuttle FAQ section at http://global.shuttle.com/support/faqDetail?faqId=2380.

[11] Kaby Lake processor support

The 7th generation Intel Core processors "Kaby Lake" are supported from BIOS version XH170V00.202. Download website: http://global.shuttle.com/products/productsDownload?productId=1915

Note: If a Kaby Lake processor is used, this XPC will only support Windows 10 and Linux operating systems. Windows 7 and 8.1 will no longer be supported.

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

Shuttle XPC slim Barebone XH170V – Required Components

The following components need to be added to make it a fully-configured Mini-PC:

**2.5” SATA hard disk
and/or Solid State Disk (SSD)
(two drives supported,
max. height: 9.5mm and 12.5mm)**

**optional:
M.2 2280 SSD module (SATA)**

**Slim SATA DVD drive
12.7mm height**

**One or two memory modules:
DDR3L-1333/1600 SO-DIMM
max. 16 GB each**

**LGA1151 processor
TDP max. 65W
Core i7 / i5 / i3, Pentium
or Celeron**

**Windows / Linux
Operating System**

Optional Accessories

Stand	VESA	WLAN	3.5“ Rack	Mylar Cover
PS01	PV02	WLN-S	PHD4	MY01

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany
Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

6th Generation Intel Core Desktop Processor Family

Socket LGA1151 14nm "Skylake-S" processor overview (Date: September 2015)

Processors with TDP>65W are not supported (marked in red)

Name	Model	Cores/ Threads	CPU Clock	Turbo Clock	Cache	TDP	Graphics Engine	Graphics Clock
Core i7	6700K	4 / 8	4.0 GHz	4.2 GHz	8 MB	91 W	HD 530	350~1150 MHz
	6700	4 / 8	3.4 GHz	4.0 GHz	8 MB	65 W	HD 530	350~1150 MHz
	6700T	4 / 8	2.8 GHz	3.6 GHz	8 MB	35 W	HD 530	350~1100 MHz
Core i5	6600K	4 / 4	3.5 GHz	3.9 GHz	6 MB	91 W	HD 530	350~1150 MHz
	6600	4 / 4	3.3 GHz	3.9 GHz	6 MB	65 W	HD 530	350~1150 MHz
	6600T	4 / 4	2.7 GHz	3.5 GHz	6 MB	35 W	HD 530	350~1100 MHz
	6500	4 / 4	3.2 GHz	3.6 GHz	6 MB	65 W	HD 530	350~1150 MHz
	6500T	4 / 4	2.5 GHz	3.1 GHz	6 MB	35 W	HD 530	350~1100 MHz
	6400	4 / 4	2.7 GHz	3.3 GHz	6 MB	65 W	HD 530	350~1150 MHz
	6400T	4 / 4	2.2 GHz	2.8 GHz	6 MB	35 W	HD 530	350~1100 MHz
Core i3	6320	2 / 4	3.9 GHz	–	4 MB	65 W	HD 530	350~1150 MHz
	6300	2 / 4	3.8 GHz	–	4 MB	65 W	HD 530	350~1150 MHz
	6300T	2 / 4	3.3 GHz	–	4 MB	35 W	HD 530	350~1100 MHz
	6100	2 / 4	3.7 GHz	–	4 MB	65 W	HD 530	350~1150 MHz
	6100T	2 / 4	3.2 GHz	–	4 MB	35 W	HD 530	350~1100 MHz
Pentium	G4520	2 / 2	3.6 GHz	–	3 MB	51 W	HD 530	350~1150 MHz
	G4500	2 / 2	3.5 GHz	–	3 MB	51 W	HD 530	350~1150 MHz
	G4500T	2 / 2	3.0 GHz	–	3 MB	35 W	HD 530	350~1100 MHz
	G4400	2 / 2	3.3 GHz	–	3 MB	51 W	HD 530	350~1150 MHz
	G4400T	2 / 2	2.9 GHz	–	3 MB	35 W	HD 530	350~1100 MHz
Celeron	G3920	2 / 2	2.9 GHz	–	2 MB	51 W	HD 530	350~1050 MHz
	G3900	2 / 2	2.8 GHz	–	2 MB	51 W	HD 530	350~1050 MHz
	G3900T	2 / 2	2.6 GHz	–	2 MB	35 W	HD 530	350~950 MHz

K = unlocked, **S** = Performance optimized lifestyle, **T** = Power optimized lifestyle

Note: The Shuttle XPC slim Barebone XH170V does not support the unlock-function of Intel K-Series processors.

Please refer to the support list for detailed processor support information at *global.shuttle.com*.

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu

7th Generation Intel Core Desktop Processor Family

Socket LGA1151 14nm "Kaby Lake-S" processor overview (Date: January 2017)

Processors with a TDP>65W are not supported (marked in red)

Name	Model	Cores/ Threads	CPU Clock	Turbo Clock	Cache	TDP	Graphics Engine	Graphics Clock
Core i7	7700K	4 / 8	4.2 GHz	4.5 GHz	8 MB	91 W	HD 630	350~1150 MHz
	7700	4 / 8	3.6 GHz	4.2 GHz	8 MB	65 W	HD 630	350~1150 MHz
	7700T	4 / 8	2.9 GHz	3.8 GHz	8 MB	35 W	HD 630	350~1150 MHz
Core i5	7600K	4 / 4	3.8 GHz	4.2 GHz	6 MB	91 W	HD 630	350~1150 MHz
	7600	4 / 4	3.5 GHz	4.1 GHz	6 MB	65 W	HD 630	350~1150 MHz
	7600T	4 / 4	2.8 GHz	3.7 GHz	6 MB	35 W	HD 630	350~1100 MHz
	7500	4 / 4	3.4 GHz	3.8 GHz	6 MB	65 W	HD 630	350~1100 MHz
	7500T	4 / 4	2.7 GHz	3.3 GHz	6 MB	35 W	HD 630	350~1100 MHz
	7400	4 / 4	3.0 GHz	3.5 GHz	6 MB	65 W	HD 630	350~1000 MHz
	7400T	4 / 4	2.4 GHz	3.0 GHz	6 MB	35 W	HD 630	350~1000 MHz
Core i3	7350K	2 / 4	4.2 GHz	-	4 MB	60 W	HD 630	350~1050 MHz
	7320	2 / 4	4.1 GHz	-	4 MB	51 W	HD 630	350~1050 MHz
	7300	2 / 4	4.0 GHz	-	4 MB	51 W	HD 630	350~1050 MHz
	7300T	2 / 4	3.5 GHz	-	4 MB	35 W	HD 630	350~1100 MHz
	7101E	2 / 4	3.9 GHz	-	3 MB	54 W	HD 610	350~1100 MHz
	7101TE	2 / 4	3.4 GHz	-	3 MB	35 W	HD 610	350~1100 MHz
	7100	2 / 4	3.9 GHz	-	3 MB	51 W	HD 630	350~1100 MHz
	7100T	2 / 4	3.4 GHz	-	3 MB	35 W	HD 630	350~1100 MHz
Pentium	G4620	2 / 4	3.7 GHz	-	3 MB	51 W	HD 630	350~1100 MHz
	G4600	2 / 4	3.6 GHz	-	3 MB	51 W	HD 630	350~1100 MHz
	G4600T	2 / 4	3.0 GHz	-	3 MB	35 W	HD 630	350~1050 MHz
	G4560	2 / 4	3.5 GHz	-	3 MB	54 W	HD 610	350~1050 MHz
	G4560T	2 / 4	2.9 GHz	-	3 MB	35 W	HD 610	350~1050 MHz
Celeron	G3950	2 / 2	3.0 GHz	-	2 MB	51 W	HD 610	350~1050 MHz
	G3930	2 / 2	2.9 GHz	-	2 MB	51 W	HD 610	350~1050 MHz
	G3930T	2 / 2	2.7 GHz	-	2 MB	35 W	HD 610	350~1000 MHz

K = unlocked, **T** = Power optimized lifestyle, **HT** = Hyper Threading (SMT).
Note: The Shuttle XPC slim Barebone XH170V does not support the unlock-function of Intel K-Series processors.
Please refer to the support list for detailed processor support information at global.shuttle.com.

Shuttle Computer Handels GmbH
Fritz-Strassmann-Str. 5
25337 Elmshorn | Germany

Tel. +49 (0) 4121-47 68 60
Fax +49 (0) 4121-47 69 00
sales@shuttle.eu