Barebone XS36V4

Slim PC

nonstop 24/7

Fanless

Fanless 1-litre PC suitable for 24/7 operation

The XS36V4 is the new model in Shuttle's successful XS36 range. The device has a thickness of only 36 mm and is completely fanless. In combination with an SSD drive it is quiet, virtually maintenance-free and approved for reliable 24/7 nonstop operation. The energy-efficient Intel Celeron J1900 Quad Core processor with its powerful graphics engine is suitable for a wide range of software applications including Full HD video encoding/decoding. Three monitor ports (HDMI, DisplayPort, D-Sub/VGA) allow a flexible choice of up to two displays. In addition to USB 3.0, card reader, Gigabit-LAN and WiFi, it also offers two RS-232 serial interfaces for professional applications (e.g. control device). Thanks to its multi-functional features, it is an ideal platform for professional applications such as digital signage, POS, automation, office PC or media PC.

Feature Highlights

Chassis	• Slim 1.15 litre chassis • Dimensions: 20 x 16 x 3.6 cm • Hole for the Kensington Lock • Optional VESA mount (PV03)
Operating System	• Without operating system • Compatible with Windows 10 / 8.1 / 7 (64-bit) and Linux (64-bit)
CPU	• Intel Celeron J1900, Quad Core (2 GHz)
Graphics	• Integrated Intel HD Graphics (7th gen) • Supports DX11 and 1080p Full HD Video
Memory	• 1x SO-DIMM socket (204 pins) • Max. size: 8 GB DDR3L-1333 (1.35V) Supports DDR3L-1600 at 1333 MHz
Storage	• Supports one 2.5" SATA hard disk or SSD • With SD card reader
Connectors and WLAN	• 3 video ports: HDMI, DisplayPort, D-Sub • 1x USB 3.0, 4x USB 2.0 • 2x Audio (mic, head phone) • Gigabit-LAN, WLAN 802.11 b/g/n • 2x serial ports (RS232)
Power Supply	• External 40 W fanless power adapter
Applications	• Office, POS, automation, digital signage

Images are for illustration purposes only.
Shuttle Order-No. PEB-XS36V401

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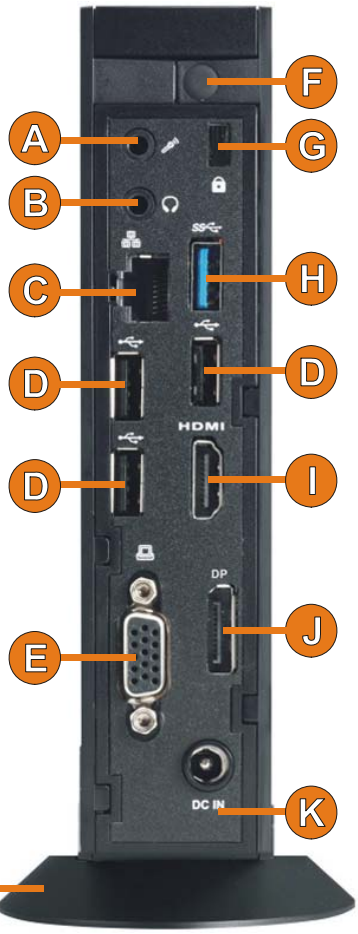
Shuttle Slim PC Barebone XS36V4 – Connectors

Front Panel

Back Panel



1	Power button	A	Microphone input	I	HDMI connector
2	Power LED	B	Head phone output (Line out)	J	DisplayPort connector
3	Hard disk LED	C	Gigabit LAN connector (RJ45)	K	DC input for the power adapter
4	Serial Port 1 (RS232/422/485)	D	3x USB connectors		
5	SD card reader	E	D-Sub/VGA connector		
6	Serial Port 2 (RS232)	F	One screw to open the chassis		
7	USB 2.0 connector	G	Hole for the Kensington-Loc		
8	Vertical stand	H	USB 3.0 connector		

Notice:
Please make sure the system is always operated in upright position using either its stand or the optional VESA mount (PV03). Ventilation holes must not be blocked to ensure sufficient cooling.

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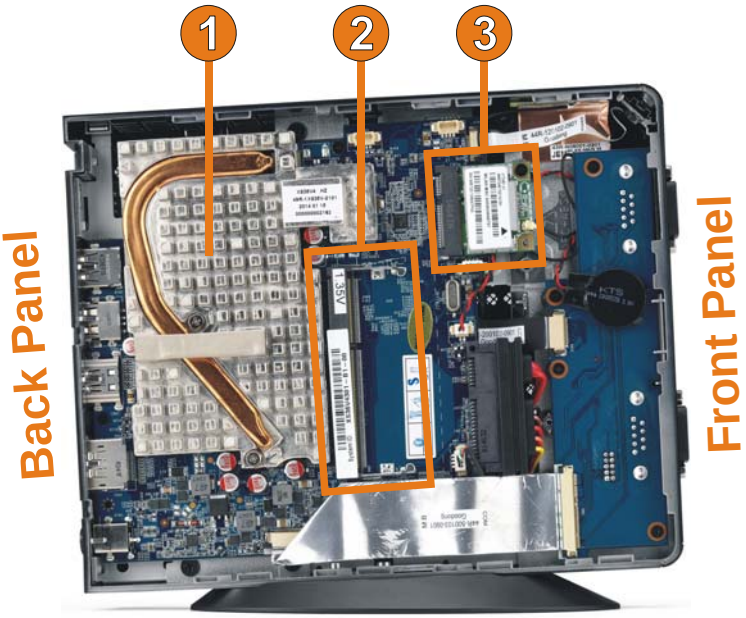
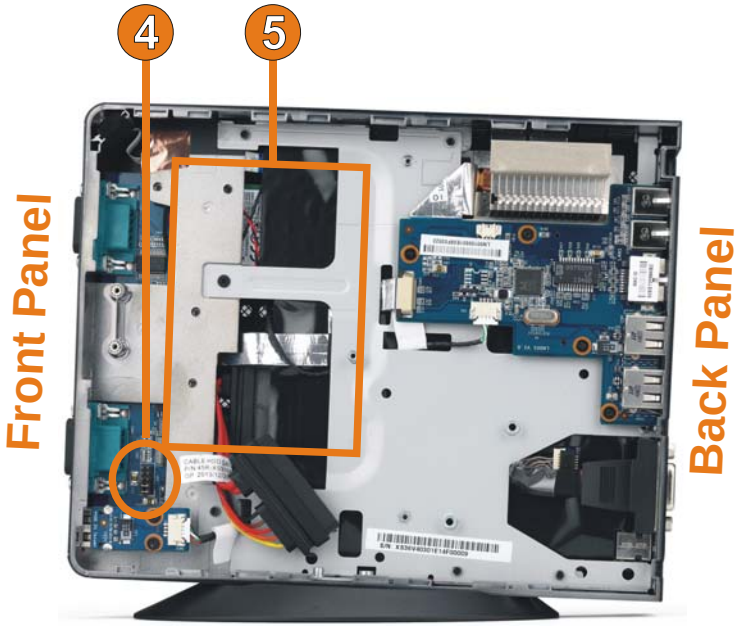
Shuttle Slim PC Barebone XS36V4 – Side View





1 Heatpipe cooling system
2 SO-DIMM slot for one DDR3L module
3 Half-Size WLAN module
4 Jumper JP2: setting for the auxilary voltage of the COM ports
5 2.5" drive bay with SATA connector (find the drive bracket in the accessory box)

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Shuttle Slim PC Barebone XS36V4 - Product Features

POS system with a Shuttle XS36V4

Ideal for professional applications

Designed as a space-saver, this sleek 1.15 litre nettop PC only measures 3.3 cm in width. It maximizes space whether it is placed upright using its stand or affixed to the back of a display with the optional VESA mounting kit. Due to its small size and flexible design, this practical nettop offers exceptional functionality. It is well-suited for professional applications like digital signage, POS system, POI terminals, control PC or office PC (e.g. thin client). Thanks to the serial ports it connects to appropriate POS displays, cash registers or digital sensors.

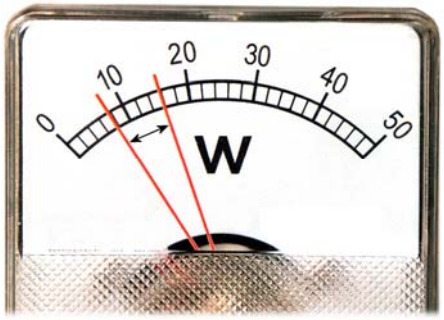
Fanless and quiet

The Shuttle Slim PC Barebone XS36V4 uses a passive thermal module with heatpipes to lead heat to the outside quickly and evenly. The unique fanless design makes it perfect to be used in noise-sensitive environments such as living rooms, hospitals, libraries etc. As an additional benefit, fanless cases rarely gather dust on the inside and stay cleaner than others. So it's not only quiet and low in energy use, but also dust-free and virtually maintenance-free.

24/7 nonstop operation

The Shuttle Slim PC Barebone XS36V4 is officially approved for 24/7 permanent operation. Thanks to its low power consumption and completely passive cooling, this PC runs highly reliable making it perfectly suitable for digital signage and POI/POS applications.

<u>Conditions for permanent use:</u>
- Ambient temperature while under load: 5-35°C
- Air humidity while under load: 10-90% (not condensing)
- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must be clear
- If a hard disk is installed, this must also be approved for permanent operation by its manufacturer (max. one hard disk)



Highly energy-saving

The XS36V4 barely consumes, depending on system load, about 8.7-16.3 Watts. Running the device*) 5 days a week for eight hours a day, the annual consumption would amount to approx. 18~34 kWh which would mean just 4.50 – 8.50 Euros on the power bill (25 Euro ct/kWh).

*) Based on a configuration with 4 GB of memory, 120 GB SSD and Windows 8.1 (64-bit).

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What does "Barebone" mean?

Shuttle's barebones range such as the XS36V4 is targeted at experienced users seeking to build a complete system to meet their individual requirements. The bulk of components is yet built in, simply the following hardware is to be installed upon purchase in this case:

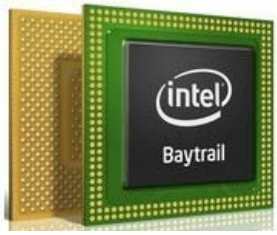
- One 6.35 cm/2.5" Serial ATA hard disk or Solid State Disk (SSD)
- One DDR3L SO-DIMM memory module (204 pins), max. 8 GB
- USB keyboard and USB mouse
- Operating system

Easy installation

Remove just one screw to unmount the two chassis covers.

Optional VESA mount (Accessory PV03)

Its optional VESA75/100 mount allows it to be installed on to walls or just affixed on the rear side of a monitor which is particularly interesting for the industry segment, company buildings and public institutions.



Celeron J1900 - energy-efficient Quad Core CPU

The Shuttle Slim PC Barebone XS36V4 is equipped with Intel's Celeron J1900 processor which is a power efficient System-on-a-Chip (SoC) from the Bay Trail-D family of the Silvermont processor microarchitecture. Thanks to the optimized 22 nanometer process, four x86-64 CPU cores and a clock speed of 2.0-2.42 GHz (Burst), energy efficiency and performance have been significantly improved compared to its predecessors, e.g. the Intel Atom D2550.

Supports smooth Full HD playback

The integrated graphics chip is based on the Intel HD Graphics (7th gen) architecture which supports DirectX 11 and is also found in the Ivy Bridge series (e.g. HD Graphics 4000). It offers generous performance for most home, office and digital signage applications. It features a wide variety of multimedia features such as H.264 hardware decoding, support for 1080p full HD video, Blu-ray playback (with external drive) and 8-channel HD Audio through HDMI and DisplayPort (DP).

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Two monitor support with HDMI, DisplayPort and VGA

The Shuttle Slim PC Barebone XS36V4 supports multiple displays connected through HDMI (DVI through optional adapter), DisplayPort (DP) and D-Sub/VGA. This improves the user's capability and productivity by allowing for spreading multiple windows across two monitors and to view them simultaneously.

USB 3.0 SuperSpeed connector

The Shuttle Slim PC Barebone XS36V4 has one built-in USB 3.0 port at the rear panel. 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 over USB 2.0. It also provides higher power and is backwards compatible with USB 2.0.

SD card reader

The built-in SD card reader at the front makes it easy to transfer files from your camera, so you can share videos and photos on your Shuttle Slim PC Barebone XS36V4 with ease.

Two serial RS-232 ports (COM)

The Shuttle Slim PC Barebone XS36V4 features two serial RS232 COM ports in the front panel. Both ports support 5V/12V auxiliary voltage and the upper port is switchable to RS422 or RS485 mode. Today, many consumer PCs do no longer have this legacy port, since this interface has been superseded by USB. Still, they are commonly used for applications of industrial automation systems, scientific analysis and POS systems.

Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. As known from notebooks, this Slim PC can also be safely locked by tieing it to a solid object.
(Lock-and-cable not included)

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Tiny power adapter

The external 40W power adapter is virtually noiseless and can easily be hidden behind the desk thanks to its tiny dimensions.
Dimensions: 89.5 x 37 x 26.5 mm (LWH) = 88ml

Watchdog — protecting system security

The built-in Watchdog Timer provides excellent security protection for systems that need to operate continuously for a long period of time. Use Shuttle's Watch Dog utility to maintain normal operation and stability of the system at all times. If, due to a hardware failure or program error, this utility fails to restart the watchdog, the timer will elapse and generate a hardware reset and reboot of the system.

CAUTION
This mainboard does only support 1.35V DDR3L memory modules.

DDR3L memory

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

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Shuttle Slim PC Barebone XS36V4 Specifications

Fanless and silent	Completely fanless, no fan noise at all Passive cooling through convective heat transfer Perfect to be used in noise-sensitive environments Fanless means less dust and thus virtually no maintenance required Notice: Please make sure the system is always operated in upright position using either its stand or the optional VESA mount. Ventilation holes must not be blocked to ensure sufficient cooling.
Low Power Consumption	Power consumption: ca. 8.7 W (idle mode) and ca. 16.3 W (full load) (Configuration: 4 GB RAM, 120 GB SSD and Windows 8.1 64-bit)
Chassis	Dimensions without stand: 20 x 16 x 3.6 cm (DxHxW) = 1.15 litres Weight: 2.1 kg net, 2.8 kg gross Hole for Kensington Lock at the back panel Optional accessory: 75mm and 100mm VESA mounting kit (PV03)
Operation System	This system comes without operating system. It is compatible with - Windows 10 (64 bit), Windows 8 / 8.1 (64 bit), Windows 7 (64 bit) **[2]** - Linux (64 Bit) **[3]**
Processor	Intel Celeron J1900, Quad Core CPU clock frequency: 2.00 GHz, max. Turbo frequency: 2.42 GHz Silvermont architecture, Bay Trail-D platform, 22nm structure CPU cores/Threads: 4/4 Cache: 2 MB Thermal Design Power (TDP): 10W SOC design with integrated graphics processor
Integrated Graphics	The Graphics Processing Unit (GPU) is integrated into the processor Intel HD Graphics (7th gen), graphics frequency: 688~854 MHz Supports DirectX 11.0, OpenGL 4.0, OpenCL 1.2, HDCP 1.3 (Blu-ray) Execution Units (EU): 4 Three video outputs: - HDMI: max. 1920x1200 resolution @ 60Hz - DisplayPort: max. 2560x1600 resolution @ 60Hz - D-Sub (VGA): max. 1920x1200 resolution @ 60Hz Dual display: supports max. two independent displays Full hardware acceleration: - for decoding: H.264, MPEG2, MVC, VC-1, VP8, MJPEG - for encoding: H.264, MPEG2, MVC
UEFI Firmware	8Mbit Flash ROM with AMI's Aptio UEFI BIOS Firmware Based on the Unified Extensible Firmware Interface (UEFI) Supports Power fail resume / AC power on state / always on / always off Supports Wake-on-LAN (WOL) from S3, S3, S5 ACPI states Supports boot up from external flash memory cards

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Memory	1x SO-DIMM slot with 204 pins Supports one module DDR3L-1333 (PC3-10600) at 1.35V Maximum capacity: 8 GB DDR3L-1600 is supported at DDR3L-1333 clock rate Notice: This mainboard does only support 1.35V DDR3L memory modules. DDR3L has a lower operation voltage compared to DDR3.
Hard Disk Drive or SSD	Supports one Serial ATA hard disk (5400 / 7200 rpm) or one SATA SSD drive in 6.35cm/2.5" format Serial ATA II Interface with up to 300 MB/s of transfer speed Supports a drive with max. 9.5 mm height Supports Unified Extensible Firmware Interface (UEFI)
Integrated Audio	Realtek ALC269 Audio Codec with Azalia and D3 mode support Two analog audio connectors (3.5mm): 1) Line-out (head phone) 2) Microphone input
Card Reader	Integrated card reader supports SD, SDHC and SDXC memory flash cards
Wired Network	RJ45 connector supports Gigabit LAN at 10/100/1000 Mbit/sec. Network controller Realtek RTL8411 Supports Wake-on-LAN (WOL) from S3, S3, S5 ACPI states Supports network boot by Preboot eXecution Environment (PXE)
Wireless Network	Half-size Mini PCIe card with RTL8188EE chip Supports IEEE 802.11b/g/n, max. 150Mbps up-/downstream Security: WPA/WPA2(-PSK), WEP 64/128bit, IEEE 802.11x/i
LEDs and Buttons	Power button Power LED (blue)
Front Panel Connectors	2x RS232 serial port (supports 5V/12V auxiliary voltage, the upper port is switchable to RS422 / RS485) 1x USB 2.0 SD card reader
Back Panel Connectors	HDMI, digital video and audio output DisplayPort, digital video and audio output D-Sub/ VGA, analog video output (15 pin) 1x USB 3.0 3x USB 2.0 Gigabit network (LAN, RJ45) Audio Line-out (head phone) Microphone input DC input for the external power adapter

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Power Supply	External 40W AC/DC power adapter (fanless), 19V / 2.1A AC Input: 100~240V AC, 50~60Hz Automatic voltage adjust Dimensions: 89.5 x 37 x 26.5 mm (LWH) DC Connector: 5.5/2.5mm (outer/inner diameter)
Optional Accessories	VESA mount made of metal (PV03)
24/7 Nonstop Operation	This device is approved for 24/7 permanent operation. Requirements: - Free circulation of air amongst the PC must be guaranteed. - Ventilation holes must be clear. - Any installed hard disk must also be approved for permanent operation by its manufacturer (max. one hard disk)
Environ-mental spec.	Operating temperature range: 0~35°C Relative humidity range: 10~90% (non-condensing)
Certification and Compliance	EMI: CE, FCC, BSMI, C-Tick Safety: CB, BSMI, ETL Other compliances: RoHS, Eup Lot6 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

[1] UEFI-Firmware (versus BIOS)
Just as many modern PCs, the XS36V4 does away completely with a BIOS, but uses a pure *) UEFI firmware instead. The terms UEFI firmware and BIOS are widely used synonymously, but hardware initialising is now performed by the UEFI. Users might not even notice, but the operating system must be installed and executed in UEFI mode. UEFI creates a GUID Partition Table (GPT) on the system partition instead of a Master Boot Record (MBR). On a PC running a pure UEFI firmware alone, must be a 64-bit operating system installed.
*) Notice: In transition period from BIOS to UEFI mainboard manufacturers still used to employ a traditional BIOS for compatibility reasons. Thanks to the integrated "Compatibility Support Module" (CSM), older Windows versions could boot from mainboards with a UEFI firmware.

[2] Windows 7 64-bit is supported since BIOS version XS36V400.110. If a BIOS update is required, the built-in UEFI shell must be used. Please refer to the FAQ section on the Shuttle website for more information on this matter. Prior to the installation of Windows 7, the BIOS must be entered and "Windows 7" must be selected as the operating system under "Boot", "OS-Selection".

[3] Linux 64-bit: A number of Linux distributions with updated Kernel versions have already been tested successfully (date: June 2014). Please refer to the FAQ section on the Shuttle website for more information on this matter.

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Shuttle Slim PC Barebone XS35/XS36 Series – A History

XS35 Series
Supports Slimline-DVD drive

XS36 Series
Supports two serial ports

Model	Graphics	Graphics output	USB 3.0	COM	WOL [3]	ODD [4]	Processor	Memory	LAN
XS35	Intel GMA3150	D-Sub	-	-	-	Yes	Atom D510 (1.66 GHz) "Pineview	Max. 2 GB DDR2-800 [6] 1x SO-DIMM	100
XS35GT	NVIDIA ION2	D-Sub, HDMI	-	-	-	Yes			
XS35V2	Intel GMA3150	D-Sub	-	-	-	Yes	Atom D525 (1.80 GHz) "Pineview	Max. 4 GB DDR3-800 [6] 1x SO-DIMM	Giga
XS35GT V2	NVIDIA ION2	D-Sub, HDMI	-	-	-	Yes			
XS35GTA V2	ATI Mobility Rad. HD 5430	D-Sub, HDMI	-	-	-	Yes			
XS35GS V2	ATI Radeon HD 7410M	D-Sub, HDMI	-	-	-	Yes			
XS35V3(L)	Intel GMA3650 [2]	D-Sub, HDMI	-	-	Yes	Yes	Atom D2700 (2.13 GHz) "Cedarview"	Max. 4 GB DDR3-1066 [6] 2x SO-DIMM	Giga
XS35GTA V3 XS35GS V3 [1]	ATI Radeon HD 7410M	D-Sub, HDMI	-	-	Yes	Yes			
XS36V	Intel GMA3650 [2]	D-Sub, HDMI, DVI	-	2x	Yes	-			
XS35GS V3L	ATI Radeon HD 7410M/7450[7]	D-Sub, HDMI	-	-	Yes	Yes	Atom D2550 (1.86 GHz) [5] "Cedarview"		
XS36VL	Intel GMA3650 [2]	D-Sub, HDMI, DVI	-	2x	Yes	-			
XS35V4	Intel HD Graphics (7th gen)	D-Sub, HDMI, DisplayPort	Yes	-	Yes	Yes	Celeron J1900 (2.00 GHz) "Bay Trail"	Max. 8 GB DDR3L-1333 1x SO-DIMM	Giga
XS36V4	Intel HD Graphics (7th gen)	D-Sub, HDMI, DisplayPort	Yes	2x [8]	Yes	-			

[1] XS35GTAV3 is called XS35GS V3 outside EU.
[2] Intel offers sophisticated graphics drivers for the integrated Intel GMA3650 graphics for Windows 7 32 bit only.
[3] Supports Wake-on-LAN (WOL), Power fail resume (always on/off) and Resume by RTC Alarm
[4] "ODD" means a 5.25" bay for an optical drive in slimline format
[5] In 2012, Intel phased out the Atom D2700 processor and introduced the D2550 as its successor.
[6] DDR3-1333 is supported at DDR3-1066 or DDR3-800 clock rate respectively.
[7] XS35GSV3L: In the beginning of 2014, the GPU was updated from HD 7410M to HD 7450.
[8] XS36V4 provides two serial RS232 ports which both support 0V/5V/12V. The upper port is switchable to RS422 / RS485.

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