

Value Mini-PC Barebone for the 2nd generation Intel Core processors

The XPC Barebone SH61R4 with Socket 1155 supports powerful Intel Core processors of the second generation and is based on the Intel H61 chipset. Two high-resolution displays can be connected using the two DVI connectors on the rear panel to manage demanding visualization tasks. Ten USB ports are present, three of which being USB 3.0, and allow for connecting different peripheral devices. Two DIMM sockets can take up to 8 GB of dual-channel DDR3 memory. As a special feature, the front panel of the R4 chassis boasts a removable acrylic plate for a customizable front design. The SH61R4 convinces as an attractive aluminium Mini PC with modern technologies and a reliable heatpipe cooling system.

xpc Barebone SH61R4



Images for illustration purposes only.

Feature Highlights

R4 chassis	<ul style="list-style-type: none"> Black aluminium chassis (13.3 litre) Bays: 1x 5.25" external, 2x 3.5" internal
CPU	<ul style="list-style-type: none"> Supports Socket 1155 Desktop CPUs Supports Intel Core i3 / i5 / i7 (TDP ≤95W) Shuttle I.C.E. Heat-pipe cooling system
Slots	<ul style="list-style-type: none"> 1x PCIe x16 (v2.0) supports dual-slot PCI-Express X16 graphics cards with 6 pin power connector 1x PCIe X1 (v2.0), 1x Mini-PCIe X1 (v2.0)
Chipset	<ul style="list-style-type: none"> Intel H61 Express PCH
Integrated Graphics	<ul style="list-style-type: none"> Intel HD graphics integrated in the Intel Core i3/i5/i7 processor Video output: 2x DVI (DVI-I und DVI-D) Supports HDCP, 1080p Full-HD
Memory	<ul style="list-style-type: none"> Supports 2x DDR3-1066/1333 Up to 8 GBytes in total
Drive connectors	<ul style="list-style-type: none"> 4x SATA 3Gb/s 2 pre-installed SATA cables With UEFI Bios – supports hard disks >2.2TB
Other connectors	<ul style="list-style-type: none"> 5.1-ch HD-audio GigaBit LAN (RJ45) 2x USB 3.0 (rear) 8x USB 2.0 (2x front, 6x rear) optional: RS232 COM-Port (H-RS232)
Power supply	<ul style="list-style-type: none"> 250 Watt mini power supply
Application	<ul style="list-style-type: none"> Business, Office, Entry-level



Shuttle XPC Barebone SH61R4 – Product Features



The R4 chassis design: a clean and modern look

Shuttle has always placed great emphasis on the interior and exterior aesthetics of the XPC with the belief that a good blend of style and form factor allows the XPC to be attractive, versatile, and work well in almost any environment. The construction and cover of the R4 chassis is made of aluminium. This leads to a stylish-robust appearance and makes it a popular design. The drives and media connectors on the front are easy to access in daily use.



Customizable

The front of this XPC can easily be customized by simply changing the mylar behind the acrylic front plate. Add your individual design such as a photo, graphics or a company logo to the front panel in just a few steps.

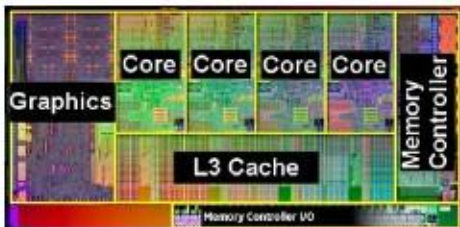


Small, but easy to build

Shuttle XPCs offer the performance of a desktop PC at a third of the size while using standard desktop components. Be ready for the future when banking on Shuttle's new H3 chassis. The meticulously designed internal layout features pre-routed cables to reduce clutter, increase airflow and make the installation of components easy.

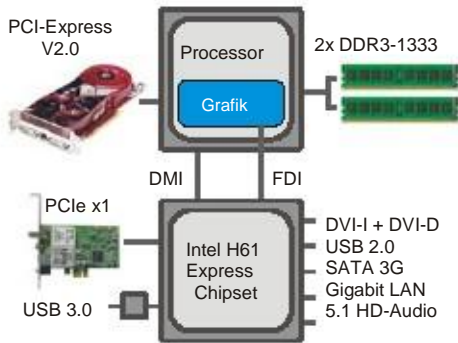
Supports Intel 32nm Sandy Bridge Processors

Sandy Bridge is the codename for Intel's new 32nm processor microarchitecture introduced in early 2011. It is the most sweeping architectural transition from Intel since the introduction of Pentium 4. In addition up to four CPU cores, the design incorporates the memory controller, PCIe links and the graphics processor. This integration brings higher performance, lower platform power consumption and more compact packaging. The integrated graphics processor (IGP) has become more capable. It can decode and encode H.264 high-definition video streams. The architecture provides a high-bandwidth, ring-style interconnect between the cores with their associated L3 cache partitions and the IGP. This also allows the IGP to expand its available bandwidth by making use of the L3 cache.



2nd Generation Intel Core processor family

The new "Sandy Bridge" processors for socket 1155 follow the same naming system as its predecessor "Nehalem" for socket 1156, but are not downward compatible. Please refer to the support list for detailed processor support information at global.shuttle.com.



Single-Chip Chipset: Intel H61 Express

The design of the Core i3/i5/i7 processors will eliminate the need for the traditional Northbridge found on previous generation mainboards. Thus the Shuttle XPC Barebone SH61R4 sports Intel's H61 Express Platform Controller Hub (PCH) from the Intel 6-Series "Cougar Point" family which integrates the hard drive controller, network controllers, monitor and physical interfaces, PCIe links and other input/output functionalities.



Integrated Cooling Engine (I.C.E.)

Shuttle XPCs offer the performance of a desktop PC at a third of the size. In order to ensure proper airflow inside such a small case, more advanced cooling technologies have been developed and implemented in the Shuttle XPC. Shuttle's industry-leading I.C.E. heatpipe technology delivers efficient cooling and is exceptionally quiet.



What does "Barebone" mean?

The Shuttle XPC Barebone SH61R4 consists of a stylish case with pre-installed mainboard, power supply unit (PSU) and cables. Despite its small form factor, it offers outstanding connectivity, functionality and performance. For a full PC system, components such as a processor, memory, hard disk and operating system need to be added that can be chosen individually to ideally match personal needs. Some XPC models require a graphics card to be added.



2x USB 3.0

The Shuttle XPC Barebone SH61R4 sports two USB 3.0 ports on the back panel besides eight USB 2.0 ports on both front and rear. USB 3.0 achieves a maximum data rate of up to 5.0Gbps (640MBytes/sec) which is ten times faster than USB 2.0. USB 3.0 is fully compatible to USB 2.0, but not to USB 1.1. At first USB 3.0 connectors seem no different to USB 2.0 connectors, however USB 3.0 connectors have 5 more pins placed inside the connector itself. USB 2.0 can provide a maximum output of 500mA to the USB device while USB 3.0 can provide a maximum output of 900mA which is particularly important for portable hard drives. USB 3.0 also comes with better power saving features to let devices draw less power when idle.



PCI-Express V2.0 for high-performance graphics cards

The Shuttle XPC Barebone SH61R4 is equipped with one PCI-Express x16 Version 2.0 slot delivering a bandwidth of up to 16GB/s which is twice the speed of PCI-E 1.0. Thus there is plenty of potential for the newest graphics cards. It is also downward compatible, allowing for use of most of the current present graphics cards. SH61R4 also features a 6 Pin ATX auxiliary power connector for powerful graphics cards.





Internal Drives

Up to one optical drive and two hard disks can be fitted in the SH61R4. To reduce heat and improve on airflow, the drive rack built into the SH61R4 leaves generous space between the hard disks. Intelligently-engineered airflow mechanics channels cool air to where it is needed most - protecting components and providing optimal performance.



Built-in Intel® HD Graphics Engine

The Intel GMA HD 3000 / 2000 graphics processor has been moved onto the same die as the CPU. It supports HDMI 1.4a standard with 3D stereoscopic playback, hardware encoding for H.264 and MPEG-2 video, full 1080p high-definition video playback - including Blu-ray, DirectX 10.1 and Shader 4.1. HD 2000 has 6 execution units (similar to shader/stream processors) while HD 3000 has 12, the latter is only available on the "K" series, though the i7's allow for a higher maximum dynamic graphics frequency. With all these improvements and changes to the architecture, this GPU is comparable to entry-level discrete graphics cards such as the AMD Radeon HD 5450.



Dual View Technology with two digital video ports

Dual View technology offers multiple display support for up to two separate monitors. This helps to improve on productivity by allowing to spread multiple windows across two monitors while working with them simultaneously. The SH61R4 features two digital DVI video outputs.



Video outputs

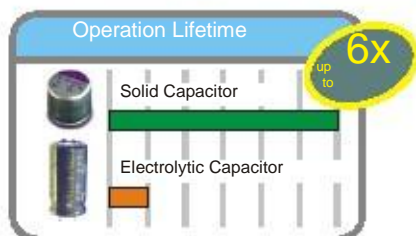
With optional adapters (not included) DVI-D devices can be D-Sub connected to the HDMI port or VGA devices to the DVI-I port, (VGA) respectively.

D-Sub (VGA) means the connector only outputs analog video signals. DVI-D means the connector only outputs digital video signals. DVI-I means digital and analog video signals are put out. HDMI supports digital video plus multi-channel digital audio output, but the DVI port and the adapter do not provide digital audio signals.



Optional: Serial RS-232 port (COM)

One serial COM port (RS232) can optionally be installed to the back panel (accessory "H-RS232"). This is particularly relevant to professional applications such as electronic POS systems, industrial automation systems and scientific analysis.



Solid Capacitors

By using all-solid capacitors (audio excepted) Shuttle mainboards are long-life and provide industry-leading stability and reliability. The average lifespan of one solid capacitor is more than six times longer compared to the previous generation of electrolytic capacitors.

Socket 1155 processor overview (August 2011)

Name	Model	Cores	HT	Clock	Turbo	Cache	TDP	Graphics	Graphics clock
Celeron	1-	1.6 GHz	-1	MB 35W	HDG	G440			650~1000 MHz
	2-	2.4 GHz	-2	MB 65W	HDG	G530			850~1000 MHz
	2-	2.0 GHz	-2	MB 35W	HDG	G530T			650~1100 MHz
	2-	2.5 GHz	-2	MB 65W	HDG	G540			850~1000 MHz
Pentium G630T	2-	2.2 GHz	-3	MB 35W	HDG	G620T			650~1100 MHz
	2-	2.6 GHz	-3	MB 65W	HDG	G620			850~1100 MHz
	2-	2.7 GHz	-3	MB 65W	HDG	G630			650~1100 MHz
	2-	2.3 GHz	-3	MB 35W	HD				850~1100 MHz
	2-	2.8 GHz	-3	MB 65W	HDG	G840			850~1100 MHz
	2-	2.9 GHz	-3	MB 65W	HDG	G850			850~1100 MHz
	2-	3.0 GHz	-3	MB 65W	HDG	G860			650~1100 MHz
	2Yes	2.5 GHz	-3	MB 35W	HD	2000	2100T		850~1100 MHz
	2Yes	3.1 GHz	-3	MB 45W	HD	2000	2100		850~1100 MHz
	2Yes	3.1 GHz	-3	MB 45W	HD	3000	2105		850~1100 MHz
Core i3 2120	2Yes	3.3 GHz	-3	MB 45W	HD	2000			650~1100 MHz
	2Yes	2.6 GHz	-3	MB 35W	HD	2000	2120T		850~1100 MHz
	2Yes	3.3 GHz	-3	MB 65W	HD	3000	2125		850~1100 MHz
	2Yes	3.4 GHz	-3	MB 65W	HD	2000	2130		650~1100 MHz
	2Yes	2.7 GHz	-3	3.5 GHz	3 MB 35W	HD	2000	2390T	850~1100 MHz
	4-	2.8 GHz	-3.1 GHz	6 MB 95W	HD	2000	2300		850~1100 MHz
	4-	2.9 GHz	-3.2 GHz	6 MB 95W	HD	2000	2310		850~1100 MHz
Core i5 2405S	4-	3.0 GHz	-3.3 GHz	6 MB 95W	HD	2000	2320		850~1100 MHz
	4-	2.5 GHz	-3.3 GHz	6 MB 65W	HD	2000	2400S		850~1100 MHz
	4-	2.5 GHz	-3.3 GHz	6 MB 65W	HD	3000			850~1100 MHz
	4-	3.1 GHz	-3.4 GHz	6 MB 95W	HD	2000	2400		650~1250 MHz
	4-	2.3 GHz	-3.3 GHz	6 MB 45W	HD	2000	2500T		850~1100 MHz
	4-	2.7 GHz	-3.7 GHz	6 MB 65W	HD	2000	2500S		850~1100 MHz
	4-	3.3 GHz	-3.7 GHz	6 MB 95W	HD	2000	2500		850~1100 MHz
	4-	3.3 GHz	-3.7 GHz	6 MB 95W	HD	3000	2500K		850~1100 MHz
	4Yes	2.8 GHz	-3.8 GHz	8 MB 65W	HD	2000	2600S		850~1350 MHz
	Core i7 2600	4Yes	3.4 GHz	-3.8 GHz	8 MB 95W	HD	2000		
4Yes		3.4 GHz	-3.8 GHz	8 MB 95W	HD	3000	2600K		

K = unlocked, S = Performance optimized lifestyle, T = Power optimized lifestyle, HT = Hyper Threading
 Intel HD graphics HD 3000/2000 supports 12/6 Execution Units (Shader-Quads) and DirectX 10.1
 Note: Intel® H61 Express Chipset does not enable overclocking features of unlocked 2nd generation Intel Core processor family (K series: Core i5-2500K and Core i7-2600K).
 Please refer to the support list at global.shuttle.com for detailed processor support information.

Shuttle XPC Barebone SH61R4 Specifications

R4-Chassis	<p>Black aluminium chassis with acrylic front plate Customizable front panel design: simply change the mylar and add your individual design such as a photo, graphics or a company logo to the front panel. Storage bays: 1 x 5.25" (external), 2 x 3.5" (internal) Dimensions: 32.5 x 21.5 x 19 cm (LWH) = 13.3 liters (without rubber feet) Weight: 3.2 kg net / 5.0 kg gross</p>
Mainboard and Chipset	<p>Shuttle Mainboard FH61, Shuttle form factor, proprietary design for XPC SH61R4 Chipset/Southbridge: Intel® H61 Express (Codename: Cougar Point) Platform Controller Hub (PCH) as Single-Chip-Solution Passive chipset cooling with heatsink The Northbridge is integrated in the processor Solid Capacitors for sensitive areas provide excellent heat resistance for enhanced system durability</p>
BIOS	<p>AMI BIOS, SPI Interface, 32MBit Flash-ROM Supports PnP, ACPI 3.0, Hardware Monitoring Supports boot up from external USB flash memory Supports Unified Extensible Firmware Interface (UEFI) ***</p>
Power Supply	<p>250 Watt mini power supply unit Input voltage range: 100~240V Connectors: 20-pin ATX, 4-pin ATX12V Other connectors: 4x SATA, 2x Molex, 1x Floppy Graphics power connector: 6 pins Active PFC (Power Factor Correction)</p>
Processor Support	<p>Socket 1155 (LGA 1155) supports next generation of Intel Core i3 / i5 / i7 desktop processors with up to 95W TDP Codename "Sandy Bridge", 32nm process technology Not compatible with older Socket-1156 processors The processor integrates PCI-Express, memory controller and the graphics engine on the same die Please refer to the support list for detailed processor support information.</p>
Heatpipe Processor Cooling	<p>Shuttle I.C.E. (Integrated Cooling Engine) advanced I.C.E. heatpipe technology, linear controlled 92mm fan SilentX cooling and noise reduction technology with Active Airflow</p>
Memory Support	<p>2 x 240 pin slots Supports DDR3-1066/1333 SDRAM memory (PC3-8500/10600) Supports Dual Channel mode Supports max. 4 GB per DIMM, maximum total size 8 GB</p>

<p>Integrated Graphics</p>	<p>Intel® HD Graphics 2000/3000 integrated in processor Supports Pixel Shader 4.1 and DirectX 10.1 Maximum size of Shared Memory: 1692MB Supports DVI, max. resolution 1920x1200 @ 60Hz Supports D-Sub, max. resolution 2048x1536 @ 75Hz (optional VGA-to-DVI adapter required) Supports HDCP through DVI and HDMI (HDMI through optional adapter) Supports full HD 1080p Blu-ray (BD) / HD-DVD playback Supports Dual-Independent-Display through DVI-D and DVI-I **)</p>
<p>Expansion Slots</p>	<p>1x PCI-Express x16 v2.0 slot (PEG, for graphics cards only) 1x PCI-Express x1 v2.0 slot, open-ended ****) 1x Mini-PCI-Express x1v2.0 half/full-size slot (for optional WLAN module) Supports dual-slot graphics cards (occupies second PCI-Express slot) With 6 pin power connector for the graphics card. If a discrete graphics card is used, the onboard graphics will be deactivated</p>
<p>6-Channel Audio</p>	<p>Audio Codec: IDT 92HD89C, 5.1 channel Three analog audio connectors (3.5mm) at the back panel: line-in (blue), line-out (green) and microphone input (pink) shared with 5.1 channel line-out (front, rear, center/bass) Front panel: microphone input and head phone output (line-out)</p>
<p>Gigabit-LAN Controller</p>	<p>Gigabit LAN Realtek RTL 8111E Ethernet network controller PCI Express interface IEEE 802.3u 1000Base-T compliant Supports 10 / 100 / 1.000 MBit/s operation Supports Wake-on-LAN (WOL)</p>
<p>Drive Connectors</p>	<p>4x Serial ATA rev. 2.0, max. 3 Gbit/s (onboard)</p>
<p>Front Panel Connectors</p>	<p>Microphone input Headphone output 2x USB 2.0 Power button Power indicator (Blue LED) Hard disk drive indicator (Yellow LED)</p>
<p>Back Panel Connectors</p>	<p>DVI-D **) supports HDMI through optional adapter DVI-I **) supports analog VGA through optional adapter 6x USB 2.0 2x USB 3.0 GigaBit LAN (RJ45) Audio Line-out Audio Line-in Microphone Input Clear CMOS button optional: Serial RS232 port (Accessory: "H-RS232") Perforation for three optional WLAN antennas</p>

<p>Other Connectors (onboard)</p>	<p>2x USB 2.0 (2x5 pins) - occupied by front panel 1x RS232 serial interface (2x5 pins) 2x fan connectors (4 pins and 3 pins) Audio AUX input</p>
<p>Included Accessories</p>	<p>Multi-language XPC Installation Guide 32/64bit driver disk including Adobe Reader Software 2x pre-installed SATA cables Power Cord Screws Heatsink Compound Cable straps</p>
<p>Optional Accessories</p>	<p>Back panel adapter for serial RS232 port (H-RS232) Wireless LAN Modul 802.11n (Mini-PCIe card) 300W power supply, 80Plus Bronze (PC61J) 500W power supply, 80Plus Bronze (PC63J)</p>
<p>Certifications Compliance</p>	<p>EMI: FCC, CE, BSMI, C-Tick Safety: ETL, CB, BSMI Other: RoHS, Energy Star 5.0, EuP Lot6 Conformity: 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>

***) Overclocking Warning:**

Please note there is a certain risk involved with overclocking, including adjusting the settings in the BIOS or using third-party overclocking tools. Overclocking may affect your system stability or even cause damage of the components and devices of your system. It is done at your own risk and expense. Shuttle cannot be held responsible for possible damage caused by overclocking.

****)** The integrated video outputs (DVI-D and DVI-I) will be disabled, if a PCI-Express graphics card is installed.

*****)** Unified Extensible Firmware Interface (UEFI) – required when booting from hard disks larger than 2.2 TB under Windows 64 bit operating systems such as Windows 7, Windows Vista SP1 and Windows Server 2008/2003 SP1.

******)** Open-ended PCI-E slot - The X1 slot uses an open-ended socket to permit physically longer cards (e.g. X4 or X8) while the speed is limited to X1.

Shuttle XPC SH61R4 – Connectors

Front view

Rear view



- 1 5.25" bay for the optical drive
- 2 Removable acrylic plate
- 3 Hard disk LED indicator
- 4 Power switch with LED
- 5 2x USB 2.0 ports
- 6 Microphone input
- 7 Headphone output

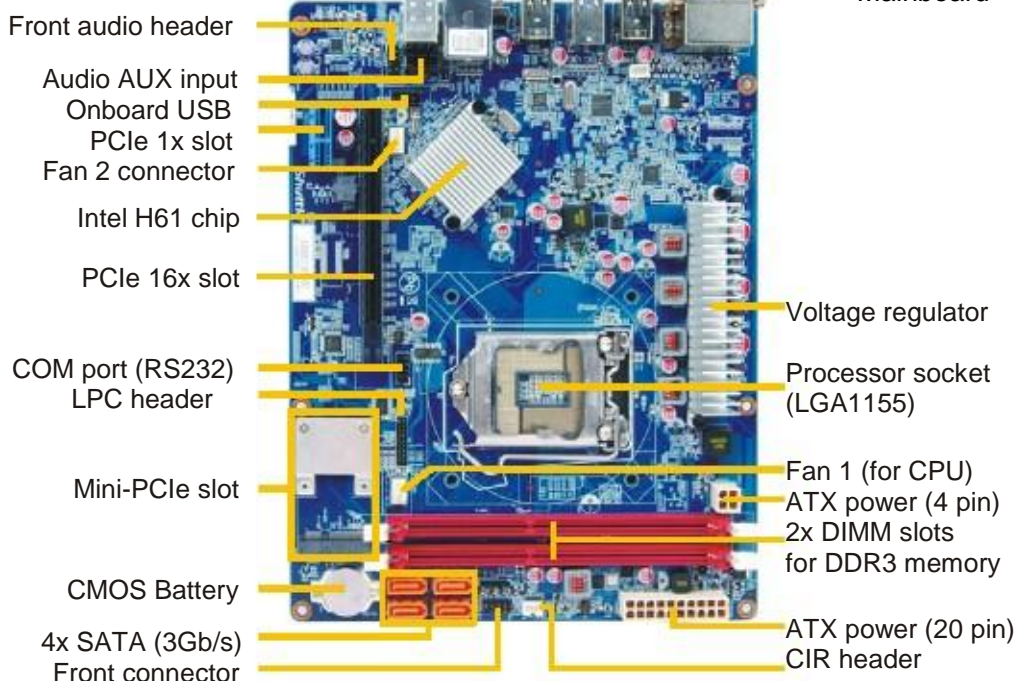
- A Perforation for optional WLAN module
- B Three thumbscrews
- C Power supply
- D Power supply fan
- E AC power connector
- F Heatpipe cooling system
- G Hole for Kensington Lock
- H COM / RS232 (optional**)
- I DVI-I video output *)
- J DVI-D video output *)

- K Gigabit LAN (RJ45)
- L 6x USB 2.0
- M 2x USB 3.0
- N Clear-CMOS-Button
- O Microphone input
- P Audio Line-out
- Q Audio Line-in
- R PCI-Express X16 slot
- S PCI-Express X1 slot

*) Remark: the DVI video outputs will be disabled, if a PCI-Express graphics card is installed. **) Adapter H-RS232

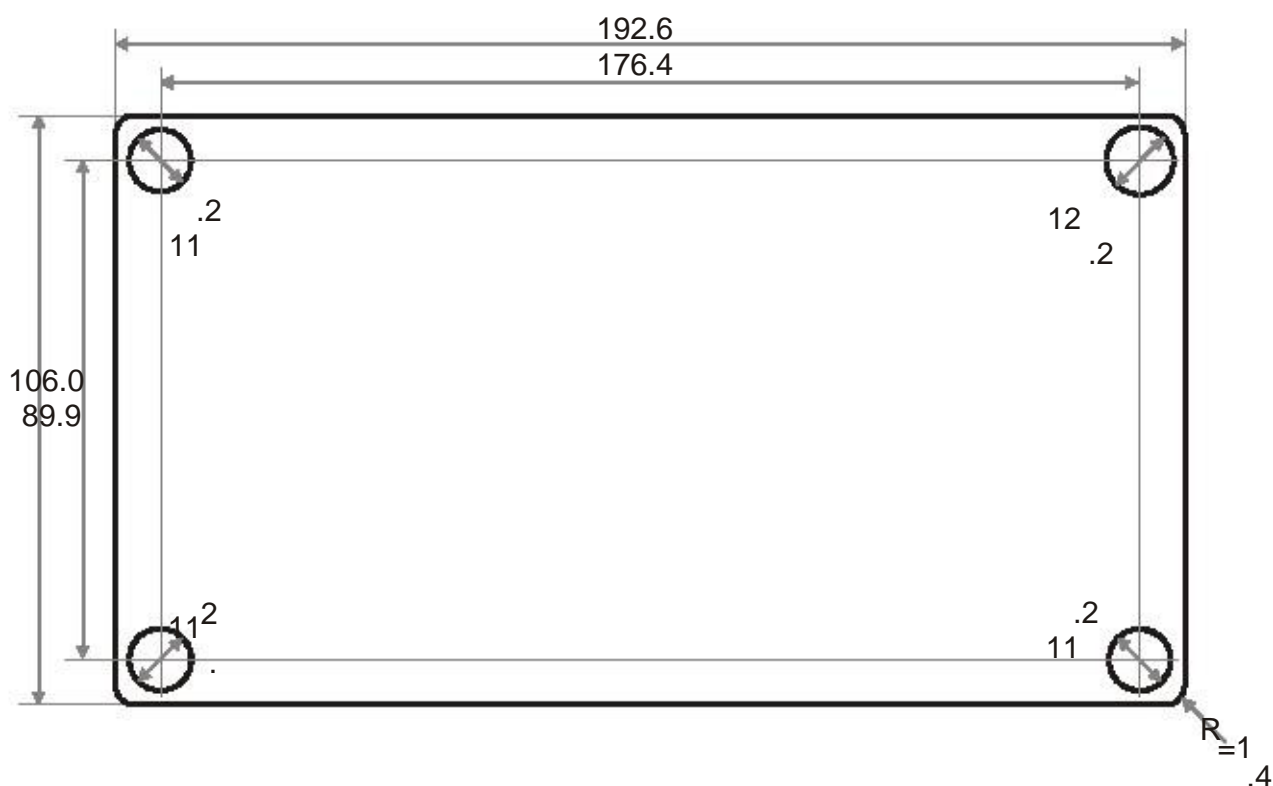
Back panel connectors

Mainboard



Shuttle SH61R4 – Mylar Dimensions

The R4 front panel comes with a removable acrylic plate which allows for creating individual front designs. Simply change the mylar and add your individual design such as a photo, graphics or a company logo to the front panel in just a few steps.



All dimensions in millimeter (mm)



Example