Fanless Slim PC with Core i7 processor for numerous applications

1.3L Slim PC Barebone
DS 57 U7

The DS57U7 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. Installation of components goes straight forward, as there is plenty of interior space for two memory modules, a 2.5" drive and a mSATA module. The built-in Intel Core i7 processor with integrated HD graphics 5500 provides ample performance for fluent playback of video at 2160p Ultra HD quality. Thanks to its re-designed passive cooling architecture, the system is virtually maintenance-free and is approved for 24/7 nonstop operation. It is big on performance, yet extremely energy-efficient. The Shuttle Slim-PC Barebone DS57U7 is an ideal platform for professional applications such as digital signage, POS, Kiosk, Thin Client, Cloud Computing, Office PC and Multimedia.

Feature Highlights

|	
Slim Design	• 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	• The operating system is not included • Compatible with Windows 7/8.1/10, Linux
Processor	• Intel Core i7-5500U, 2.4 / 3.0 GHz • Intel HD Graphics 5500, DX 11.2 • Fanless heatpipe cooling
Memory Slots	• 2x 204 pin SO-DIMM slots • Supports max 2x 8GB DDR3L-1600 (1.35V)
Storage Bays	• Bay: 6.35cm/2.5" for hard disk or SSD • Slot: Full-Size Mini-PCIe slot supports mSATA
Connectors	• 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	• External 65 W fanless power adapter
Applications	• Digital Signage, POS, control device, etc. • Approved for 24/7 permanent operation

Images for illustration purposes only.
This product does not include memory, storage and operating system.

8 87993 00031 2

Shuttle

Shuttle Slim-PC Barebone DS57U7 – Product Views
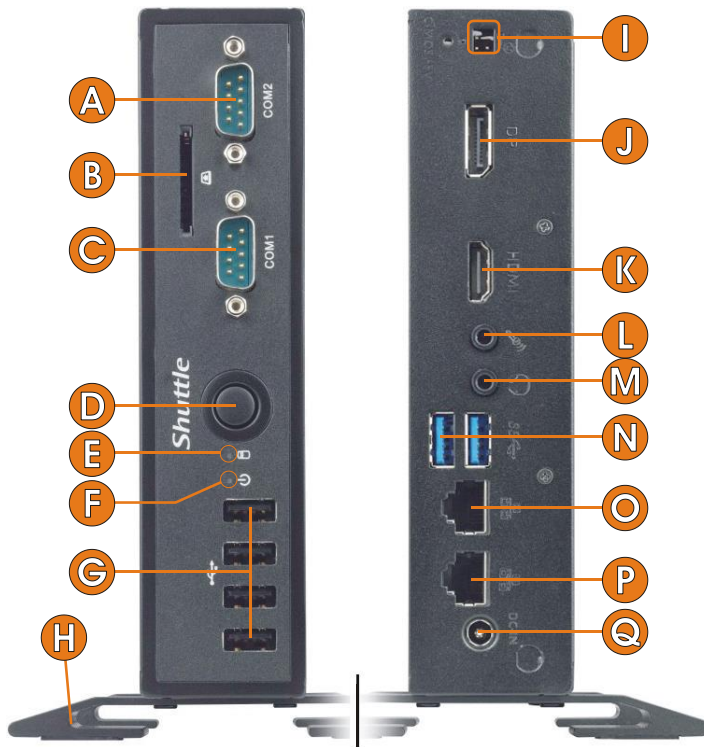
A   COM2: RS-232
B   SD card reader
C   COM1: RS-232/422/485
D   On/Off power button
E   Hard disk LED indicator
F   Power LED indicator
G   4x USB 2.0
H   Stand with screws
I   Pin connector for external power or CMOS button or 5V DC voltage supply
J   DisplayPort Audio/Video output
K   HDMI Audio/Video 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 *)
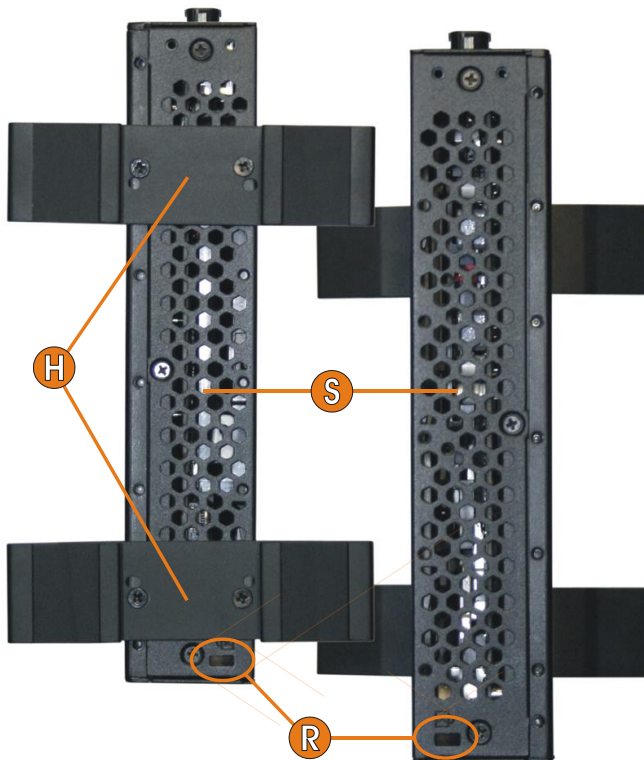
*) The WLAN module is included a Mini-PCIe card. The other components such as hard disk, SSD, memory modules, other Mini-PCIe cards or mSATA modules are not.

www.shuttle.eu

Shuttle Slim-PC Barebone DS57U7 – Product Features

3.95
20 cm
1.3 L
Shuttle
16.5 cm
11 cm

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 DS57U7 is sufficient to meet the needs of the most demanding multimedia and computational workloads. The well-designed interior of the DS57U7 makes installations and upgrades effortless. Its sleek and stylish look blends seamlessly in both home and office environments.

What does Barebone mean?

SO-DIMM Speicher · **Mini-PCIe oder mSATA** · **2,5" SSD oder Festplatte**

The Shuttle Slim-PC Barebone DS57U7 consists of a stylish metal case with pre-installed mainboard including processor, 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 can be customised by installing the following components i.e. peripherals:

- up to two DDR3L SO-DIMM memory modules (max. 2x 8 GB DDR3L-1333/1600)
- one 2.5" storage drive (hard disk or SSD)
- one Mini-PCIe card or mSATA module
- keyboard, mouse and operating system

Once the desired operation system is installed, the DS57U7 is ready to use.

Ease of installation thanks to bay covers

The Shuttle Slim-PC Barebone DS57U7 features two practical bay covers at the bottom of the chassis which makes the installation or upgrade of hardware components a breeze. No cable is required and no cooling system needs to be installed - setup is quickly completed.
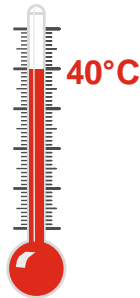
24/7 nonstop operation and 0~40°C temperature range

The Shuttle Slim-PC Barebone DS57U7 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
- If a hard disk is installed, this must also be approved for permanent operation by its manufacturer
- for ambient temperatures higher than 35°C we strongly recommend to use an SSD (instead of an HDD) [5].

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® Core™ i7-5500U Processor

The Shuttle Slim-PC Barebone DS57U7 is equipped with an Intel® Core™ i7-5500U 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 Barebone DS57U7 is capable of decoding Ultra HD video with driver support for all major operation systems including Windows 7, Windows 8.1, Windows 10 and Linux.
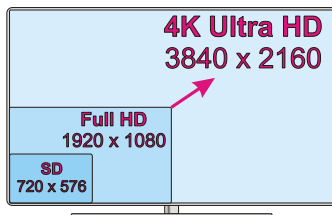
Great Connectivity

Despite its small size, the Shuttle Slim-PC Barebone DS57U7 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 Barebone DS57U7 features two digital video outputs: HDMI and DisplayPort. Dual View technology offers multiple display support on up to two separate FullHD 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 DS57U7 supports displays running at 4K (3840 x 2160 / 2160p) high resolution at 60Hz frames per second when connected to its DisplayPort video output. Being the successor to the Full HD standard, Ultra HD delivers a four times higher resolution with a wider colour space and colour depth.

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 Barebone DS57U7 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.

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 Barebone DS57U7 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).

COM ports with plastic caps

RS-232
RS-422
RS-485

RS-232

www.shuttle.eu

USB 3.0

The Shuttle Slim-PC Barebone DS57U7 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.

Expansion slots for Mini-PCI-Express cards

The Shuttle Slim-PC Barebone DS57U7 features two Mini PCI Express expansion slots which can easily be accessed by removing the appropriate bay cover. One slot supports half size cards and is already occupied by a WLAN card. The other slot also supports full size cards and can be used either for a Mini PCIe card or for a mSATA (Mini Serial ATA) card which is a Solid State Drive (SSD) in a compact Mini PCIe card form factor.

WLAN   **mSATA**

VESA mount

The supplied 75/100mm VESA mount allows the Shuttle Slim-PC Barebone DS57U7 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 Barebone DS57U7 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.
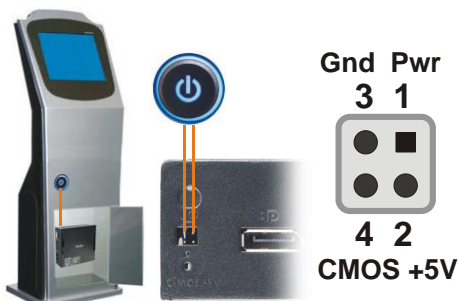
External power button by separate remote line

Gnd Pwr
3   1

4   2
CMOS +5V

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 Barebone DS57U7 (pitch 2.54 mm). In addition, this connector also provides the Clear CMOS function and an external 5VDC voltage supply.

| Pin 1-3	Connect external power button (use a temporary switch)
Pin 3-4	Close these pins for 3 seconds to perform a Clear CMOS
Pin 2-3	External +5V DC voltage (Pin 3 = Ground).

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 DS57U7 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 Barebone DS57U7 provides an appropriate hole on both sides of its chassis. The lock-and-cable is not included.

⚠ CAUTION
This mainboard does only support 1.35V DDR3L memory modules.
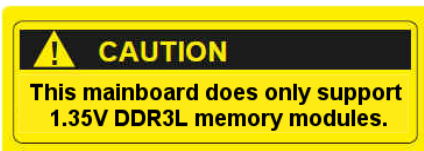
Supports Energy-Efficient DDR3L memory only

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 Barebone DS57U7 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 Barebone DS57U7 Specifications

Fanless and Silent	Passive cooling, no fan noise at all Perfect to be used in noise-sensitive environments Fanless, dust-free and thus virtually maintenance-free
Low Power Consumption	Power consumption: idle: 12.5 W, full load: 17 / 26.5 W (without/with graphics) (measured with 2x 2GB SO-DIMM, 60 GB 2.5" SSD)
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 stay clear. - If a hard disk is installed, this must also be approved for permanent operation by its manufacturer
Chassis	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
Operation Position	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.
Operation System	This barebone system comes without operating system. It is compatible with Windows 10, Windows 8.1, Windows 7 and Linux [8] Supports 32- and 64-bit.
Processor	Model: Intel i7-5500U (ULV) System-on-a-chip architecture (SoC): no chipset required Code name: Broadwell (5th Generation Intel Core) Cores / Threads: 2 / 4 Clock rate: 2.4 GHz, up to 3.0 GHz in Turbo mode L1/L2/L3 Cache: 128 kB / 512 kB / 4096 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 5500 engine Supports 64 Bit, VT-x, VT-d, AVX, AVX2, AES-NI, Enhanced SpeedStep, NX bit, SSE 4.1/4.2

Integrated Graphics	Intel HD graphics 5500 Two digital audio/video ports: DisplayPort 1.2 [7] and HDMI 1.4a Clock rate: 300~950 MHz Execution Units (EU): 24 Supports one Ultra HD / 4K display running at 3840 x 2160 (2160p) resolution Max. frame rate with Ultra HD resolution: 60 Hz via DisplayPort, 30 Hz via HDMI Supports two independent screens at 2560 x 1600 resolution Supports DirectX 11.2, OpenCL 1.3/2.0, OpenGL 4.3 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
Mainboard BIOS	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
Power Adapter	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 Input	DC Input Connector: 5.5 / 2.5 mm (outer/inner diameter) The DC-input of the computer supports an external power source with either 12V±5% or 19V±5%.
Memory Support	2x SO-DIMM slots with 204 pins Supports DDR3L-1333 (PC3-10600) and DDR3L-1600 (PC3-12800) SDRAM at 1.35V Supports Dual Channel mode Supports a maximum of 8 GB per DIMM, maximum total size: 16 GB Supports two unbuffered DIMM modules (no ECC) Caution: This mainboard does only support 1.35V DDR3L memory modules. Note: DDR3L has a lower operation voltage compared to DDR3
Mini-PCIe Slots	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.
Audio	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

Dual Gigabit LAN	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) and Teaming Supports network boot by Preboot eXecution Environment (PXE)
Wireless Network (WLAN)	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
2.5" Drive Bay	Supports one Serial ATA hard disk or one SATA SSD drive in 6.35cm/2.5" format Device height: 9.5 or 12.5 mm (max.) Supports Serial-ATA III, 6 Gb/s (600 MB/s) bandwidth Supports Unified Extensible Firmware Interface (UEFI) Note: no Serial ATA cable is required
Card Reader	Integrated SD card reader Supports SD, SDHC and SDXC memory flash cards Supports booting from SD card
Front Panel Connectors	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)
Back Panel Connectors	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)
Always-On-Jumper	Always-On Jumper: By removing Jumper J7 (please refer to the quick user guide), the system will start unconditionally once power is applied. [6]
Onboard Connectors	EDP1 - Embedded DisplayPort (eDP, 2x15 pin) [2]

Scope of Delivery	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 (for Windows 32- / 64-bit) External power adapter with power cord
Environmental Specifications	Operating temperature range: 0~40 °C [5] Relative humidity, non-condensing: 10~90%
Conformity Certifications	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

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] Caution: for high ambient temperature over 35°C we strongly recommend to use SSDs (supporting at least 70°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 Barebone DS57U7 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.

[8] Linux successfully tested with Fedora 21 x64, Ubuntu 14.04 x64, Open SuSE 13.2 x64, CentOS 7 x64, LinuxMint 17.1 x64 (date: January 2015)

Shuttle DS47 / DS57 Series – Comparison

	DS47	**DS437**	**DS437T**	**DS57U Series *)**
Intel Processor	**Celeron 847** Dual Core 1.1 GHz 17 W TDP 32 nm "Sandy Bridge"	**Celeron 1037U** Dual Core 1.8 GHz 17 W TDP 22 nm "Ivy Bridge"		**Celeron 3205U** **Core i3-5005U** **Core i5-5200U** **Core i7 5500U** Dual Core 15 W TDP 14 nm "Broadwell"
Integrated Graphics	350~800 MHz DirectX 10.1	350~1000 MHz DirectX 11.1		300~800 MHz DirectX 11.2
SO-DIMM Memory	max. 2x 8 GB DDR3-1066/1333	max. 2x 8 GB DDR3-1333/1600		max. 2x 8 GB **DDR3L**-1333/1600
Front Panel	Card reader 4x USB 2.0 **2x COM**		Card reader 2x USB 2.0 **2x USB 3.0**	Card reader 4x USB 2.0 **2x COM**
Back Panel	DVI + HDMI 2x Audio 2x USB 3.0 **2x Gigabit LAN (Realtek)**		DVI + HDMI 2x Audio 2x USB 3.0 **2x USB 2.0** 1x Gigabit LAN (Realtek)	DisplayPort + HDMI 2x Audio 2x USB 3.0 **2x Gigabit LAN (Intel)**
Expansion Slots	Mini-PCIe Slot supports **mSATA**		Slot for one **TPM module**	Mini-PCIe Slot supports **mSATA**
Two Feet	Clamp fastening		Clamp fastening	**Screw fastening**
Front/Back View				

*) Products of the Shuttle DS57U series:

Shuttle Product	Processor Model	Cores / Threads	Clock / Turbo	L3-Cache	Graphics	EUs	GPU Clock	DDR3L (max.)	TDP
DS57U	Celeron 3205U	2 / 2	1.5 / – GHz	2 MB	HD	12	300 / 800 MHz	1600 MHz	15 W
DS57U3	Core i3-5005U	2 / 4	2.0 / – GHz	3 MB	HD 5500	24	300 / 850 MHz	1600 MHz	15 W
DS57U5	Core i5-5200U	2 / 4	2.2 / 2.7 GHz	3 MB	HD 5500	24	300 / 900 MHz	1600 MHz	15 W
DS57U7	Core i7-5500U	2 / 4	2.4 / 3.0 GHz	4 MB	HD 5500	24	300 / 950 MHz	1600 MHz	15 W

www.shuttle.eu