

## Good value, small and powerful

With the NC01U Series, Shuttle introduces its first Mini-PC with less than 600 ml in volume. These small computers are powered by Intel's highly efficient "Broadwell" ULV processors ranging from Celeron up to Core i7. This barebone can be equipped with up to 16 GB of DDR3L memory, one M.2 (2242) SSD card and one 2.5" storage drive (HDD or SSD). It also comes with a vast array of connectivity options such as HDMI, Mini-DisplayPort, USBs, LAN, WLAN-AC, COM port, Audio and an SD card reader. This makes it the ideal platform for applications such as digital signage, POS, Kiosk, Thin Client, Cloud Computing, Office PC and Multimedia.

## Feature Highlights

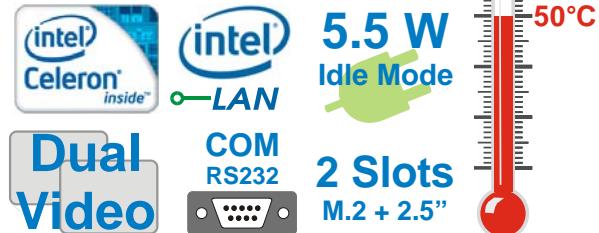
<b>Slim Design</b>	<ul style="list-style-type: none"> <li>• Slim plastic chassis, black, 577 ml</li> <li>• Dimensions: 141 x 141 x 29 mm (LWH)</li> <li>• Incl. Stand &amp; VESA mount (75/100 mm)</li> <li>• Hole for Kensington Lock</li> <li>• Operating temperature: max. 50°C</li> </ul>
<b>Operating System</b>	<ul style="list-style-type: none"> <li>• An operating system is not included</li> <li>• Compatible with Windows 7/8.1/10, Linux</li> </ul>
<b>Processor</b>	<ul style="list-style-type: none"> <li>• Intel Celeron 3205U, 1.5 GHz</li> <li>• Integrated Intel HD Graphics, DX 11.2</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>• Supports max. 2x 8 GB DDR3L-1600 SO-DIMM</li> </ul>
<b>Drive Bay</b>	<ul style="list-style-type: none"> <li>• One 6.35cm/2.5" bay, 7 mm height supports one SATA hard disk or SSD</li> </ul>
<b>M.2 Slot</b>	<ul style="list-style-type: none"> <li>• Supports one M.2-2242-BM SSD with SATA</li> </ul>
<b>Connectors</b>	<ul style="list-style-type: none"> <li>• HDMI 1.4a, Mini-DisplayPort 1.2</li> <li>• 2x USB 3.0 - 2A charging current</li> <li>• 2x USB 2.0, Gigabit LAN (RJ45)</li> <li>• Audio Combo (headphones, microphone)</li> <li>• SD card reader, RS232 COM port</li> </ul>
<b>WLAN+BT</b>	<ul style="list-style-type: none"> <li>• Wireless LAN 802.11ac + Bluetooth 4.0</li> </ul>
<b>Power Supply</b>	<ul style="list-style-type: none"> <li>• External 65 W fanless power adapter</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>• Home Media, Office, Digital Signage, etc</li> </ul>

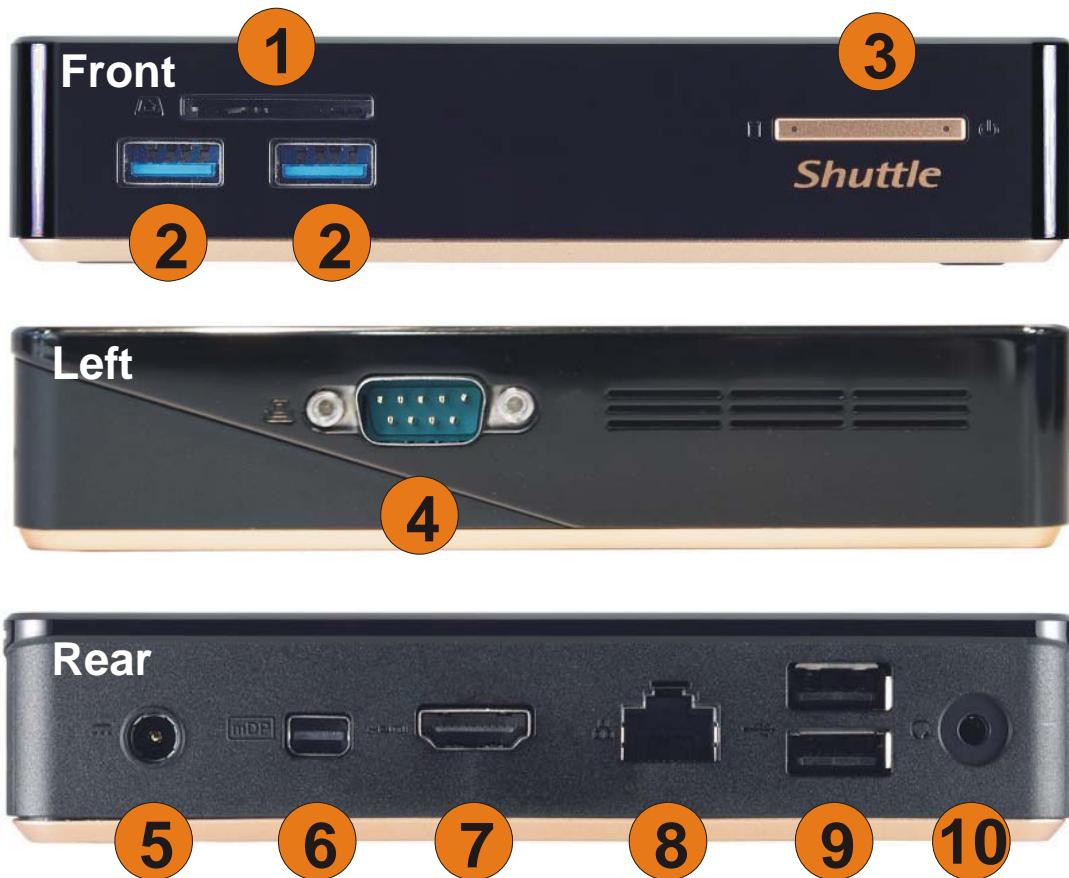
## Products of the Shuttle XPC nano Barebone NC01U Series

Product	UPC-Code	Processor	Cores	Threads	CPU Clock	Cache	Graphics	EUs	GPU Clock	4K *
NC01U	887993000480	Celeron 3205U	2	2	1.5 GHz	2 MB	HD	12	300~800 MHz	--
NC01U3	887993000527	Core i3-5005U	2	4	2.0 GHz	3 MB	HD 5500	24	300~850 MHz	Yes
NC01U5	887993000534	Core i5-5200U	2	4	2.2~2.7 GHz	3 MB	HD 5500	24	300~900 MHz	Yes
NC01U7	887993000541	Core i7-5500U	2	4	2.4~3.0 GHz	4 MB	HD 5500	24	300~950 MHz	Yes

\*) Note: An Intel Core i3 processor or higher and dual channel memory (two modules) is required to support 4K Ultra-HD resolution (2160p).

## XPC nano Barebone NC01U (Celeron)



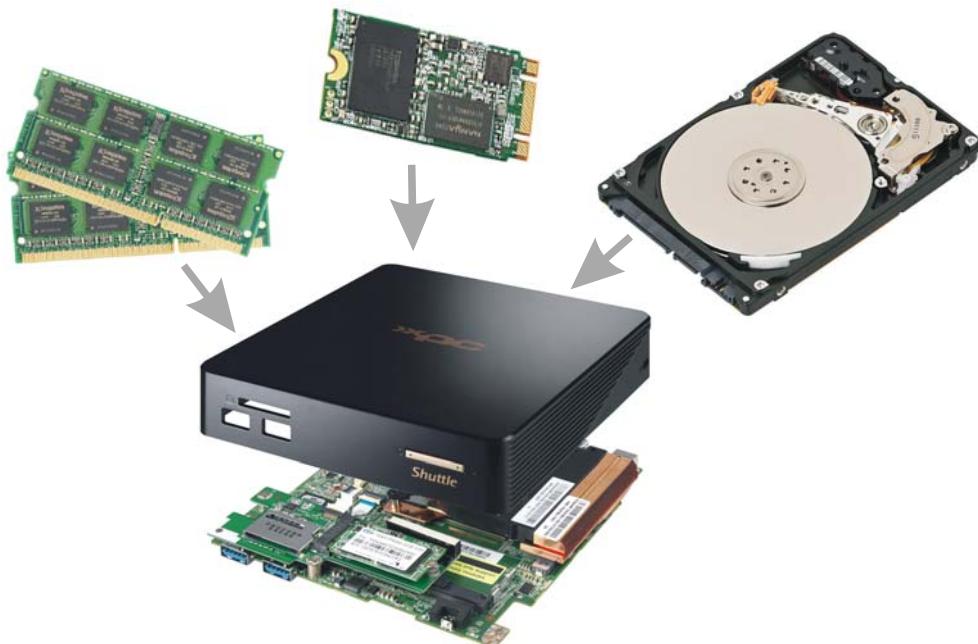
**Shuttle XPC nano Barebone NC01U – Product Views****1** Card reader**2** 2x USB 3.0 (2A charging current)**3** On/Off Button with 2 LEDs**4** RS232 COM port**5** DC input for external power adapter**6** Mini-DisplayPort**7** HDMI**8** Gigabit LAN (RJ45)**9** 2x USB 2.0**10** Audio Combo Port 3.5 mm:  
Headphones and Microphone

## Components for installation

**1~2 memory modules**  
up to 2x 8GB DDR3L-1600  
in SO-DIMM format

**One M.2 SSD storage**  
M.2-2242-BM (22x42mm)  
with SATA interface

**One 2.5“ drive**  
SSD or HDD with SATA  
connector (7 mm)



## Operating Positions

1. Horizontal
2. Vertical with Stand
3. VESA-mounted behind a monitor

Stand and VESA mount with screws  
are included.





## Product Features

### Stylish and absolutely small

The black plastic case with its curves and coppery elements is certain to be the eyecatcher on your desk. Its volume of barely 600 ml makes it hardly noticeable as a PC, particularly when it is hidden behind monitors thanks to the supplied VESA mount. Despite its dinky dimensions, it provides generous connectivity options and even room for one 2.5 inch drive which can be an SSD or HDD.



### Energy-saving

Power consumption mainly depends on system load. Equipped with a 2.5" SSD drive, the system consumes about 5.5 W in idle mode and a maximum of 22.4 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 11.5 kWh which would mean just 2.9 Euros on the power bill (25 Euro ct/kWh) - way less than a conventional desktop PC draws.



### Quick Charge via USB 3.0

Both USB 3 ports have a maximum power output of a 2A current, even if the PC is switched off. Do not connect other storage devices via a USB hub.



### 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.



### Serial Port

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. The Shuttle XPC nano Barebone NC01U features one serial RS-232 interface with the traditional 9-pin D-Sub connector for easy connectivity of appropriate components.



### Dual Monitoring via HDMI and Mini-DisplayPort

The NC01U can connect two digital displays through its HDMI and Mini-DisplayPort. Dual monitoring helps improve on productivity by allowing for spreading multiple windows across two monitors while working with them simultaneously.

Note: An Intel Core i3 processor or higher and dual channel memory (two modules) is required to support 4K Ultra-HD resolution (2160p).

## Optional Expansion Kits

The Shuttle XPC nano Barebones of the NC01U7-Series can be enhanced by additional features with an expansion kit that is sold separately. This happens in the form of a modular box that is connected to the bottom of the main PC unit.



### XVB01 - AMD R7 M370 Graphics (Litho XT)

#### Graphics Accelerator

- TDP 25W, 28nm process technology
- Supports H.264, VC-1, MPEG4, MPEG2, MVC
- Thermal Solution: fan and heat-pipe
- VRAM: DDR3 2GB VRAM, 128 Bits
- Supports Windows 7, 8.1, 10 and Linux
- Uses the graphics ports at the back panel of NC01U7



### XLB01 - Gigabit LAN + 2x USB + 2.5" bay

#### Additional expansion possibilities:

1. Intel i211 LAN function supports 10/100/1000 Mbps
2. Two USB 2.0 connectors
3. 2.5" bay, maximum height: 12.5 mm  
Supports one SSD or hard disk, SATA 6 Gbps

Supports Windows 7, 8.1, 10 and Linux



### XCB01 - 3x COM + 2.5" bay

#### Additional expansion possibilities:

1. Three serial RS232 COM ports (connected via PCIe)
2. Two USB 2.0 connectors
3. 2.5" bay, maximum height: 12.5 mm  
Supports one SSD or hard disk, SATA 6 Gbps

Supports Windows 7, 8.1, 10 and Linux

## Shuttle XPC nano Barebone NC01U - Specifications

<b>Chassis</b>	Barebone PC with a black plastic chassis Dimensions: 141 x 141 x 29 mm (LWH) = 577 ml Weight: 0.36 kg net, 1.26 kg gross Hole for Kensington Lock Includes vertical stand and 75/100mm VESA mount
<b>Low Power Consumption</b>	Power consumption in idle mode: 5.5 W, full load: 11.6 / 22.4 W (without/with graphics) (measured with 4 GB DDR3L SO-DIMM, 64 GB 2.5" SSD, Windows 7)
<b>Operating System</b>	This barebone system comes without operating system. It is compatible with: - <b>Windows 7</b> (including Embedded [4]), 32- and 64-bit - <b>Windows 8.1</b> (including Embedded [4]), 32- and 64-bit - <b>Windows 10</b> , 32- and 64-bit - <b>Linux</b> , 32- and 64-bit (e.g. Ubuntu, OpenSUSE, Fedora)
<b>Processor</b>	Model: Intel Celeron 3205U (ULV) System-on-a-chip architecture (SoC): no chipset required Code name: Broadwell (5th Generation Intel Core) Cores / Threads: 2 / 2 Clock rate: 1.5 GHz L1/L2/L3 Cache: 128 kB / 512 kB / 2048 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 engine Supports 64 Bit, VT-x, VT-d, Enhanced SpeedStep, NX bit, SSE 4.1/4.2
<b>Integrated Graphics</b>	Intel HD Graphics Clock rate: 300~800 MHz Maximum resolution: 2560 x 1600 Execution Units (EU): 12 Two digital audio/video ports: Mini-DisplayPort 1.2 [1] and HDMI 1.4a Supports two independent screens 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
<b>Mainboard BIOS</b>	Supports resume after power failure Supports Wake on LAN (WOL) Supports Power on by RTC Alarm Supports booting from USB devices and SD card reader AMI BIOS in 8 MByte EEPROM with SPI interface Supports hardware monitoring and watch dog function (ITE 8528E) Supports Unified Extensible Firmware Interface (UEFI)

<b>Power Adapter</b>	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 Connector: 5.5/2.5mm (outer/inner diameter)
<b>Memory Support</b>	2x 204-pin SO-DIMM slot Supports DDR3L-1333/1600 (PC3-10600/12800) SDRAM at 1.35V Supports Dual Channel mode Supports a maximum of 8 GB per DIMM, maximum capacity: 16 GB Supports two unbuffered DIMM modules (no ECC) <u>Caution:</u> This mainboard does only support 1.35V DDR3L memory modules. Note: DDR3L has a lower operation voltage as DDR3
<b>Slot for M.2 SSD</b>	M.2 slot: (NGFF) type 2242, key M Supports M.2 SSD card, key B+M, dimensions 22 x 42 mm, Serial ATA interface <u>Caution:</u> SSDs with PCIe interface (M key only) are <u>not</u> supported
<b>Audio</b>	Audio Realtek® ALC 269Q-VC3 High-Definition Audio Codec 3.5mm / 4-pole combo audio connector for headphones and microphone [2] Digital multi-channel audio output: via HDMI and Mini-DisplayPort
<b>Gigabit LAN</b>	Intel i218LM PHY connected to the MAC of the processor Supports 10 / 100 / 1.000 MBit/s operation (Gigabit) Supports WAKE ON LAN (WOL) Supports network boot by Preboot eXecution Environment (PXE)
<b>Wireless Network (WLAN)</b>	WLAN expansion card (M.2- 2230-AE) with two internal antennas Chip: Realtek RTL8821AE Supports Wireless LAN IEEE 802.11b/g/n/ac 1T1R, 2.4 GHz or 5 GHz Max. speed: 150 Mbps (2.4 GHz) or 433 Mbps (5 GHz) Supports Bluetooth 4.0
<b>2.5" Drive Bay</b>	Supports one Serial ATA hard disk or one SATA SSD drive in 6.35cm/2.5" format Device height: 7 mm (max.) Supports Serial-ATA III, 6 Gb/s (600 MB/s) bandwidth Note: no Serial ATA cable is required
<b>Card Reader</b>	Integrated SD card reader Supports SD, SDHC and SDXC memory flash cards Genesys Logic GL823-OGY08 with USB interface Supports booting from SD card
<b>Front Panel Connectors</b>	2x USB 3.0 (both support 2.0 A charging) SD card reader (supports SD, SDHC, SDXC) Power button Power LED (blue, blinking in suspend mode) HDD LED (orange)

<i>Back Panel Connectors</i>	Mini-DisplayPort 1.2 [1] HDMI 1.4a 2x USB 2.0 Gigabit LAN (RJ45) Audio Combo Port for headphones and microphone ( 3.5 mm jack, 4-pole) [2] DC-input connector for external power adapter
<i>Left Side Connectors</i>	Serial RS232 COM port (D-Sub, 9-pin)
<i>Supplied Accessories</i>	Multi-language user guide Driver DVD for Windows VESA mount set (made of steel, with screws) Stand for vertical operation mode Bracket for a 2.5" drive with screws Power adapter with AC power cord
<i>Optional Expansion Kits</i>	(available from Q1'16 on request) 1) Graphics: AMD R7 M370 "Litho XT" 2) I/O box: 1x Gigabit LAN, 2x USB 2.0, 1x 2.5" bay (SATA 6G) 3) I/O box: 3x RS232 COM port, 1x 2.5" bay (SATA 6G)
<i>Environmental Specifications</i>	Operating temperature range: 0~50°C [3] Relative humidity range: 10~90% (non-condensing)
<i>TPM Module (optional)</i>	Only available upon request: Trusted Platform Module (TPM) supports TPM 1.2 or 2.0 specifications
<i>Conformity Certifications</i>	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), (4) 1999/5/EC related to Radio and Telecommunications Terminal Equipment (R&TTE)

**[1] Mini-DisplayPort**

A monitor with a standard DisplayPort can ideally be connected using an adapter cable that converts Mini-DisplayPort to DisplayPort (e.g. DELOCK 82698).

**[2] Audio connector**

The 3.5mm audio jack at the back panel of this device supports both a 4-pole connector for headphones and microphone and headphones with only a 3-pole connector. Headsets with separate connectors for headphones and microphone, though, require an appropriate adapter, if also the microphone should be used.

**[3] High ambient temperatures**

Caution: for high ambient temperature over 40°C we strongly recommend to use SSDs (supporting at least 70°C) and rugged SODIMM memory with wide temperature range (up to 95°C).

**[4] Note regarding supported Windows Embedded versions:**

Supports Embedded versions based on Windows 7/8:

- Windows 7 Ultimate for Embedded Systems
- Windows 7 Professional for Embedded Systems
- Windows Embedded Standard 7
- Windows Embedded POSReady 7
- Windows Embedded 8.1
- Windows Embedded 8/8.1 Industry

Do not support Embedded versions based on Windows XP:

- Windows XP Embedded
- Windows XP Professional for Embedded Systems
- Windows Embedded Standard 2009
- Windows Embedded POSReady 2009
- Windows Embedded for Point of Service (WEPOS)