

### Compact All-in-One PC for POS and control applications

The Shuttle XPC all-in-one P20U with an 11.6" multi-touch display is positioned as a space-saving POS system or control device for media playback or automation. The adjustable stand allows for flexible viewing and operation angles, while it can also be VESA-mounted to appropriate stands or walls. The front panel is protected from splashing of water and dust according to the IP54 rating. A detachable cable collector box on the bottom helps avoid clutter. Thanks to its passive cooling, the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation.

#### Feature Highlights

<b>All-in-One Design</b>	<ul style="list-style-type: none"> <li>• XPC all-in-one with 11.6" touchscreen</li> <li>• Small: 29.9 x 20.3 x 5.0 cm (WHD)</li> <li>• Stand can also be used as a handle</li> <li>• 100 mm VESA mount capable</li> <li>• IP54-compliant front panel</li> <li>• Approved for 24/7 nonstop operation</li> </ul>
<b>Display &amp; Graphics</b>	<ul style="list-style-type: none"> <li>• 29.5 cm (11.6") capacitive 10-point multi-touch display with a 1366 x 768 resolution</li> <li>• Intel HD 610 graphics with HDMI and VGA</li> </ul>
<b>CPU &amp; Cooling</b>	<ul style="list-style-type: none"> <li>• Intel Celeron 3865U, 1.8 GHz, 15 W TDP</li> <li>• Fanless cooling system</li> </ul>
<b>Storage (not included)</b>	<ul style="list-style-type: none"> <li>• Supports max. 2x 16 GB DDR4-2133 SO-DIMM</li> <li>• Supports one 2.5" SATA HDD / SSD ≤9.5 mm</li> <li>• Supports one M.2-2280 SSD (SATA / PCIe)</li> <li>• Supports internal USB stick (USB 2.0, type A)</li> </ul>
<b>Operating System</b>	<ul style="list-style-type: none"> <li>• Operating system is not included</li> <li>• Supports Windows 10 (64-bit) &amp; Linux (64-bit)</li> </ul>
<b>Connectivity</b>	<ul style="list-style-type: none"> <li>• HDMI 1.4, D-Sub/VGA, 2x USB 3.0, 4x USB 2.0</li> <li>• Gigabit LAN, 2x Audio (Mic / Headphones)</li> <li>• 2x RS232, internal USB 2.0 type A port</li> </ul>
<b>Built-in</b>	<ul style="list-style-type: none"> <li>• Wireless LAN 802.11n (1T1R), Bluetooth 4.1</li> <li>• SD card reader, 720p HD webcam</li> <li>• 2 W speaker and Microphone</li> </ul>
<b>Optional Accessories</b>	<ul style="list-style-type: none"> <li>• <b>H-RS232</b>: additional COM port on the right side</li> <li>• <b>PNFC01</b>: integrated NFC module</li> </ul>
<b>Power Supply</b>	<ul style="list-style-type: none"> <li>• External fanless power adapter, 65 W</li> </ul>
<b>Warranty</b>	<ul style="list-style-type: none"> <li>• 24 months Bring-in Service</li> </ul>

### XPC all-in-one Barebone **P20U**



Images for illustration purposes only.



11.6" Touchscreen



Nonstop operation



Fanless cooling



Front protected from dust & water



Two COM ports



Supports Windows 10 & Linux (64-bit)



Wireless and Wired Network



2x USB 3.0  
4x USB 2.0



Optional NFC module

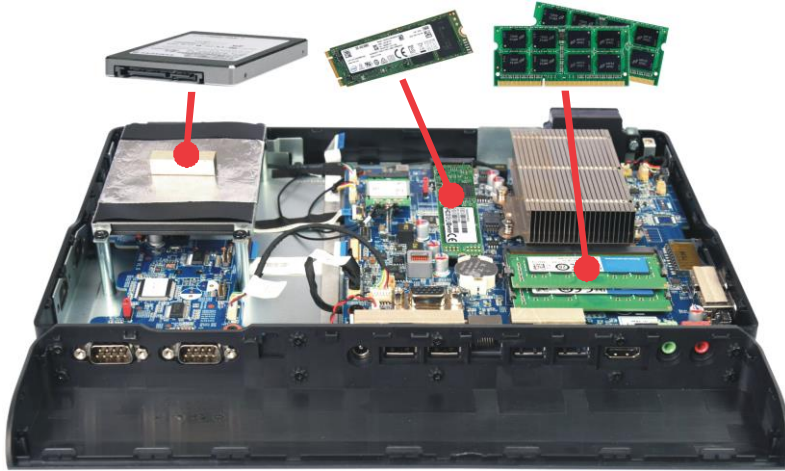


Shuttle XPC all-in-one P20U – Overview



- |   |                                       |    |                                  |    |                                                   |
|---|---------------------------------------|----|----------------------------------|----|---------------------------------------------------|
| 1 | Perforation for optional LTE antennas | 10 | Hole for the Kensington Lock     | 20 | Mono Speaker                                      |
| 2 | Optional: 2x serial COM port          | 11 | Card reader                      | 21 | 2x serial COM port                                |
| 3 | Line Collector Box                    | 12 | 2x USB 2.0 connector             | 22 | DC input for power adapter                        |
| 4 | Webcam                                | 13 | Hole with Clear CMOS button      | 23 | 2x USB 2.0 connector                              |
| 5 | Microphone                            | 14 | Detachable VESA cover            | 24 | RJ45 Gigabit LAN                                  |
| 6 | Touchscreen LCD display               | 15 | Detachable stand                 | 25 | 2x USB 3.0 connector                              |
| 7 | Hard disk LED                         | 16 | D-Sub/VGA Video Output           | 26 | HDMI Video Output                                 |
| 8 | Power-on LED                          | 17 | 2x rubber foot                   | 27 | Audio Line-out (headphones)                       |
| 9 | Power-on button                       | 18 | Output of the Line Collector Box | 28 | Microphone Input                                  |
|   |                                       | 19 | Detachable chassis cover         | 29 | Screw holes for an optional 100x100 mm VESA mount |

Installable Components

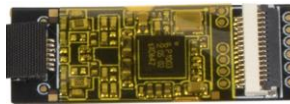


**2.5" SATA Drive**  
Hard disk or SSD  
max. 9.5 mm in height

**M.2-2280 SSD card**  
80, 60 or 42 mm  
SATA- or PCIe interface

**2x DDR4 Memory**  
max. 2x 16 GB  
SO-DIMM slot

Optional Accessories



**NFC Expansion PNFC01**  
13.56 MHz NFC writer/reader module  
including antenna  
(Windows 10 only, not for payment)



**COM Port Adapter H-RS232**  
Provides two more COM port  
connectors on the right side.  
(two H-RS232 adapters are required).

Operating Positions

Included Stand



⇒ Variable installation angle

VESA Arm / VESA Stand \*)



⇒ with or without cable collection box

VESA Wall-Mounted \*)



\*) VESA mount is not included

## Shuttle XPC all-in-one P20U – Special Features



### All applications at your fingertips

The innovative touchscreen technology delivers the simplest operation possible and makes the screen the centre of action. Its high-quality design gives you access to all capabilities of the PC - by just touching the screen.



### 24/7 nonstop operation

The Shuttle XPC all-in-one P20U 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.

#### Conditions for permanent use:

- Ambient temperature while under load: 5 - 40 °C
- Air humidity while under load: 10 - 80 % (not condensing)
- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must be kept clear
- If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.



### Fanless and quiet

The Shuttle XPC all-in-one P20U uses a passive thermal module to lead heat out of the case quickly and evenly. The unique fanless design makes it perfect to be used in noise-sensitive environments. 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 virtually maintenance-free.



### Protection Class IP54

The front panel of the Shuttle XPC all-in-one P20U is dust-protected and protected from splashing of water according to IP protection class 54. Consequently, this All-in-One PC can be used for those indoor applications, where the touchscreen may be exposed to humidity and occasional splashing of water. This is particularly welcome in restaurants, laboratories, production or other places.



### Optimised Cable Management

Most of the connectors are located on the back panel with the cables facing down and led to a cable collector box mounted on the bottom of the PC. This helps avoid clutter and makes for a clean, tidy appearance on the desk.

On the left side sit those connectors which need to be accessed from the front: a card reader and two USB ports.



**Connects to two external Full HD displays**

The Shuttle XPC all-in-one P20U features two video outputs: One analog D-Sub/VGA connector and one HDMI connector. Two separate Full HD displays can be connected in extended mode. Now add the built-in display of the P20U and there are three displays showing different content.



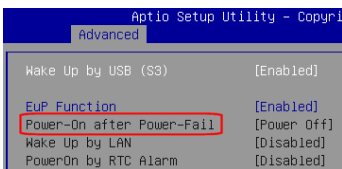
**Supports high-performance M.2 SSDs**

The M.2 slot (type 2280) is fully-equipped with 4X PCI-Express v3.0 lanes and SATA 3.0 interfaces. Modern M.2 SSDs with PCI Express interface (PCIe) and NVMe provide a significant higher bandwidth compared to the usual SATA standard. Type 2280 means it supports the usual M.2 cards with a width of 22 mm and a length of 80 mm, but also 2242 and 2260 standard cards are supported.



**RS232 COM ports**

Serial ports are still widely used for applications of industrial automation systems, scientific analysis, POS systems and other. The Shuttle XPC all-in-one P20U features two serial RS-232 ports on the bottom side and two more ports can optionally be installed on the right side (Accessory H-RS232).



**Power on after Power fail**

The BIOS setup provides a "Power-On-after-Power-Fail" function that can be found under "Power Management Configuration" where the PC's behaviour after power failure can be determined. The Shuttle XPC all-in-one P20U also comes with a hardware-based solution. By removing Jumper 7, the system will start unconditionally once power is applied.



**Internal USB Slot and perforations for external antennas**

The Shuttle XPC all-in-one P20U features an internal USB 2.0 connector (type A) for a USB stick and two perforations for optional external antennas. The internal USB connector is for expansion sticks (such as flash memory, DVB-T, SAT, LTE) or other USB devices like a radio module for home automation or RFID.



**VESA mount \*)**

The stand on the rear can easily be removed to unveil four VESA mounting screw holes that can be used for mounting arms and other mounting devices from a variety of manufacturers.

\*) VESA mount is not included

## Shuttle XPC all-in-one P20U – Specifications

<i>Fanless and silent</i>	<p>Passive cooling system, no fan noise at all                  Perfect to be used in noise-sensitive environments                  Fanless, dust-free and thus virtually maintenance-free</p>
<i>24/7 nonstop operation</i>	<p>This device is approved for 24/7 permanent operation.                  Requirements:                  - Free circulation of air amongst the PC must be guaranteed.                  - Ventilation holes must be kept clear.                  - If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.</p>
<i>IP54 protected</i>	<p>The front panel is dust-protected and protected from splashing of water according to protection class IP54.</p>
<i>Chassis</i>	<p>Colour: black                  Dimensions: 29.9 x 20.3 x 5.0 cm (W x H x D)                  100 mm VESA mount capable                  Mounting hole for Kensington lock                  Weight: 2.47 kg net, 3.39 kg gross</p>
<i>11.6" Display</i>	<p>29.5 cm / 11.6" LCD TN display                  Aspect ratio: 16:9 widescreen                  Resolution: 1366 x 768 = 1.05 Megapixel                  Backlight unit: LED, Luminance: 250 cd/sqm (typ.)                  Glass thickness: 3.2 mm, Anti-Glare</p>
<i>Touchscreen</i>	<p>Touchscreen function supports fingertip input                  Capacitive Touch Panel with 10-point multitouch                  Supports input with gloves (PVC, cotton, cotton/linen)                  Stylus pen not supported</p>
<i>Operating System</i>	<p>This system comes without operating system.                  It is compatible with:                  - Windows 10 (64-bit)                  - Linux (64-bit, does not support the NFC accessory)</p>
<i>Processor</i>	<p>Model: Intel Celeron 3865U (ULV)                  System-on-a-chip architecture (SoC): no chipset required                  BGA1356 package - directly soldered onto the mainboard                  Code name: Kaby Lake-U (7th Generation Intel Core)                  Cores / Threads: 2 / 2, Clock rate: 1.8 GHz                  L1/L2/L3 Cache: 128 kB / 512 kB / 2048 kB                  Memory controller: DDR4-2133 Dual Channel (1.2 V)                  TDP wattage: 15 W maximum, Manufacturing process: 14 nm                  Maximum Tjunction Temperature: 100 °C                  Supports 64-bit, VT-x (EPT), VT-d, Enhanced SpeedStep, NX bit, AES-NI, SSE 4.1/4.2</p>

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<p><i>Integrated Graphics</i></p>	<p>Integrated graphics engine: Intel HD Graphics 610                  GPU clock frequency: 300~900 MHz                  Execution Units (EUs): 12                  Supports DirectX 12                  Supports full H264, H265 8/10 bit, VP8/9, VC-1, AVC hardware decoding                  Supports Quick Sync Video and Clear Video HD technology</p>
<p><i>Up to three displays</i></p>	<p>Up to three displays simultaneously                  Two video ports support two additional independent screens:                  1) HDMI 1.4 supports 1920 x 1080 @ 60 Hz or 3840 x 2160 @ 30 Hz                  2) VGA / D-Sub analog video supports 1920 x 1080 @ 60 Hz                  Special conditions for operation in Multi-Monitoring mode:                  1) Clone mode: all displays show the same content at 1366 x 768 resolution                  2) Extended mode: all displays show different content</p>
<p><i>BIOS</i></p>	<p>AMI BIOS in 8 MByte EEPROM with SPI interface                  Supports Power fail resume / always on                  Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states                  Supports hardware monitoring and watch dog functionality                  Supports Firmware TPM v2.0 functionality</p>
<p><i>Memory</i></p>	<p>2x SO-DIMM slot with 260 pins                  Supports DDR4-2133 (PC4-17000) SDRAM at 1.2 V                  Supports Dual Channel mode                  Supports a maximum of 16 GB per DIMM, maximum total size: 32 GB                  Supports two unbuffered DIMM modules (no ECC or registered)</p>
<p><i>Storage</i></p>	<p>Hard disk drive / SSD:                  Supports one SATA hard disk or one SATA SSD drive in 6.35 cm / 2.5" format                  The SATA 3.0 interface supports up to 600 MB/s data transfer speed (6 Gbit/s)                  Supports one drive with up to 9.5 mm in height</p>
<p><i>M.2-2280 Slot</i></p>	<p>The M.2 2280 BM slot provides the following interfaces:                  - PCI-Express Gen. 3.0 X4 with up to 32 Gbps Data Transfer Speed                  - SATA v3.0 (max. 6 Gbps)                  It supports M.2 cards with a width of 22 mm and a length of 42, 60 or 80 mm (type 2242, 2260, 2280).                  Supports M.2 SATA SSDs (with B+M key) and M.2 PCIe SSDs (with M key)</p>
<p><i>Card Reader</i></p>	<p>Integrated card reader supports SD, SDHC and SDXC memory flash cards</p>
<p><i>Webcam</i></p>	<p>Integrated 720p HD webcam with 1.0M CMOS sensor                  Resolution: max. 1280 x 720 pixels</p>
<p><i>Microphone Speakers</i></p>	<p>Front panel with integrated Electret Condenser Microphone (front position) and one 2 W speaker (upper side)</p>

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<p><i>Audio</i></p>	<p>Integrated Audio: Realtek ALC269 Audio Codec                  Two analog audio connectors (3.5 mm) on the bottom side:                  1) Line-out (headphones)                  2) Microphone input                  Digital Audio is supported via HDMI.</p>
<p><i>Wired Network</i></p>	<p>Intel i211 Ethernet Controller with MAC, PHY and PCIe interface                  Supports 10 / 100 / 1.000 MBit/s operation                  Supports WAKE ON LAN (WOL) from S3, S4 modes                  Supports network boot by Preboot eXecution Environment (PXE)</p>
<p><i>Wireless Network</i></p>	<p>Chipset: Realtek® RTL8723BE-CG                  M.2-2230AE Combo Module: AzureWave AW-NB165NF                  Two internal antennas support WLAN Transmit/Receive (1T1R) and Bluetooth                  Supports Wireless LAN IEEE 802.11b/g/n at 2,4 GHz                  Max. PHY data rate: 150 Mbps in 802.11n mode                  Supports Bluetooth 4.1</p>
<p><i>Front LEDs</i></p>	<p>Power LED (blue)                  Hard disk LED (orange)</p>
<p><i>Connectors left side</i></p>	<p>Power button                  2x USB 2.0 (type A)                  SD card reader                  Hole with Clear CMOS button                  Mounting hole for Kensington lock</p>
<p><i>Connectors right side</i></p>	<p>Optional: 2x COM ports (1x RS232, 1x RS232/422/485)</p>
<p><i>Connectors bottom side</i></p>	<p>HDMI 1.4 (supports digital video and digital audio)                  VGA connector (D-Sub 15 pol., analog video)                  2x USB 3.0 (type A)                  2x USB 2.0 (type A)                  Gigabit Network (LAN, RJ45)                  Audio Line-out / headphones (3.5 mm jack)                  Microphone input (3.5 mm jack)                  DC input for external power adapter (5.5 / 2.5 mm)                  2x COM-Port (RS232)</p>
<p><i>Connectors onboard</i></p>	<p>Internal USB 2.0 type A connector for an USB cable                  Always power-on jumper JP7                  Serial ATA (data and power)                  3x USB 2.0 header (all occupied)                  eDP connector (Embedded DisplayPort) - occupied by the display                  LPC connector (occupied)                  I2C connector for optional NFC accessory</p>



<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
<b>DC Input</b>	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% und 19V±5%.
<b>Included Accessories</b>	Quick Installation Guide Windows 10 Driver DVD External Power Adapter (65W / 19V) with DC cable (approx. 1.7 m) Power cord with Euro plug (approx. 1.75 m) 4x screw M3 x 3 mm to mount the 2.5" drive into the rack 4x screw M2.5 x 4 mm to mount the rack into the chassis EMI shielding gasket (sponge) for 2.5" drive (ca. 8.5 x 10 x 30 mm)
<b>Optional Accessories</b>	1) <b>COM port adapter H-RS232</b> provides two more serial COM ports on the right side (requires one H-RS232 accessory for each COM port) 2) <b>NFC module PNFC01</b> (no Linux and transaction support)
<b>Environmental Criteria</b>	Operating temperature: 0~40 °C Humidity: 10~90 %
<b>Certification and Compliance</b>	EMI: CE, FCC, FAC, BSMI, RCM, VCCI & TELEC, RED Safety: CB, EAC & FSS, BSMI, ETL Other compliances: RoHS, ErP Lot 3, Energy Star v6.0 (Level 6)
<b>Conformity</b>	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 relating to Radio and Telecommunications Terminal Equipment (R&TTE)

### Power Consumption:

System configuration: P20U, BIOS v1.02, Celeron-3865 , 2x 4GB DDR4, 2,5" SSD SATA-6G 120GB, Win10-1803-64bit.

<b>Product model:</b>	<b>DH02U</b>
<b>Processor:</b>	Celeron 3865U
<b>Idle mode:</b>	12.17 W
<b>Full load (CPU only):</b>	16.23 W
<b>Full load (CPU+Graphics):</b>	31.52 W
<b>ACPI mode S3 (Standby):</b>	2.49 W
<b>ACPI mode S5 (EUP=ON):</b>	0.16 W
<b>ACPI mode S5 (EUP=OFF):</b>	0.54 W