

## Fanless All-in-One-PC with Windows 10 IoT operating system

The Shuttle XPC all-in-one IoT P5100PA boasting a capacitive 15.6-inch touchscreen and is equipped with Intel's Celeron ULV processor, 4 GB RAM, 120 GB SSD and Windows 10 IoT Enterprise 2019 LTSC. Besides the necessary security updates, this operating system version remains unchanged without function updates - ideal for professional applications like POS, POI and Digital Signage. The all-new Whiskey Lake processor architecture helps improve on power consumption and computing power. Thanks to its passive cooling, the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation. Particularly suitable for vertical applications is the arrangement of connectors at the bottom and the IP54 compliant front panel which is dust-protected and protected from splashing of water.

## XPC all-in-one System IoT P5100PA Black with Windows 10 IoT



Images for illustration purposes only.

### Feature Highlights

<b>All-in-One Design</b>	<ul style="list-style-type: none"> <li>All-in-one PC</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>39.6 cm (15.6") Full HD IPS display (1920x1080)</li> <li>Capacitive 10-point multitouch display</li> <li>Intel HD 610 graphics with HDMI 1.4b and VGA</li> </ul>
<b>CPU &amp; Cooling</b>	<ul style="list-style-type: none"> <li>Intel Celeron 4205U, Dual Core, 15 W TDP</li> <li>Intel ULV "Whiskey-Lake-U" Generation</li> <li>Fanless cooling system</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>4 GB DDR4 SO-DIMM SDRAM memory</li> <li>120 GB NVMe SSD in M.2 format</li> <li>Supports one 2.5" SATA drive (HDD/SSD)</li> <li>Supports internal USB stick (USB 2.0, type A)</li> </ul>
<b>Operating System</b>	<ul style="list-style-type: none"> <li>Windows 10 IoT Enterprise 2019 LTSC – 64-bit</li> </ul>
<b>Connectivity</b>	<ul style="list-style-type: none"> <li>HDMI 1.4b, 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 802.11ac (1T1R), Bluetooth 4.2</li> <li>SD card reader, 1080p Full HD webcam</li> <li>2x 2W speakers and microphone</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>



15.6" Multitouch



Nonstop operation



Fanless cooling



Wireless and Wired Network



2x USB 3.0  
4x USB 2.0



Internal USB-Port



Shuttle XPC all-in-one IOT P5100PA – Overview



- |    |  |
|----|--|
| 1  | 2x Perforation for optional LTE antennas |
| 2  | Power button                             |
| 3  | Speaker (left)                           |
| 4  | Card reader                              |
| 5  | 4x USB 3.0 port (= USB 3.1 Gen 1)        |
| 6  | Stand                                    |
| 6a | Cover for stand                          |
| 7  | Hole for Clear CMOS button               |
| 8  | Power LED (blue)                         |
| 9  | Storage LED (orange)                     |
| 10 | Battery LED (red)                        |
| 11 | Microphone                               |
| 12 | Webcam                                   |
| 13 | LCD Touchscreen                          |
| 14 | Speaker (right)                          |
| 15 | 2x Serial COM port (optional)            |
| 16 | Hole for Kensington Lock                 |
| 17 | 2x Serial COM port                       |
| 18 | D-Sub/VGA output                         |
| 19 | DC-input (for power adapter)             |
| 20 | 2x USB 2.0 port                          |
| 21 | Gigabit LAN port                         |
| 22 | HDMI 1.4b output                         |
| 23 | Audio Line-out (headphones)              |
| 24 | Microphone input                         |
| 25 | Screw holes for VESA mount               |
| 26 | Optional LTE antennas                    |
| 27 | Optional NFC module area                 |

© 2019 by Shuttle Computer Handels GmbH (Germany). All information subject to change without notice. Pictures for illustration purposes only.

## Shuttle XPC all-in-one IOT P5100PA – Special Features



### All applications at your fingertips - 10-point multitouch

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 IOT P5100PA 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



### Fanless and quiet

The Shuttle XPC all-in-one IOT P5100PA uses a passive thermal module to lead heat out of the case quickly and evenly. The unique fanless design makes the IOT P5100PA 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 is 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 IOT P5100PA 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 now located at the back panel facing down. This leads to an effective cable management making for a clean, tidy appearance on the desk.

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



### Connects to two external Full HD displays

The Shuttle XPC all-in-one IOT P5100PA features two video outputs: One analog D-Sub/VGA connector and one HDMI 1.4b connector. Two separate Full HD displays can be connected in extended mode. Now add the built-in display of the IOT P5100PA and there are three displays showing different content.



### 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 IOT P5100PA – Specifications

<i>Fanless and silent</i>	<p>Passive heatpipe cooling, absolutely no fan noise                  Perfect for 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.</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: 393.6 x 272.5 x 39.8 mm (W x H x D)                  100 mm VESA mountable                  Hole for Kensington lock                  Weight: 3.25 kg net, 4.5 kg gross</p>
<i>Operation System</i>	<p>Windows 10 IoT Enterprise 2019 LTSC - 64-bit</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>15.6" Display</i>	<p>39.6 cm / 15.6" LC display, IPS technology                  Ratio: 16:9 wide-screen panel                  Native resolution: 1920 x 1080 = 2 Megapixel (Full HD / 1080p)                  Brightness: 250 cd/sqm</p>
<i>Processor</i>	<p>Model: Intel Celeron 4205U (ULV)                  System-on-a-chip architecture (SoC) with integrated memory and graphics controller: no chipset required                  FCBGA1528 package - directly soldered onto the mainboard                  Code name: Whiskey Lake U (8th Generation Intel Core)                  Cores / Threads: 2 / 2, Clock rate: 1.8 GHz                  L1/L2/L3 Cache: 128 kB / 512 kB / 2048 kB                  TDP wattage: 15 W maximum                  Manufacturing process: 3rd-generation enhanced 14nm ++                  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>

© 2019 by Shuttle Computer Handels GmbH (Germany). All information subject to change without notice . Pictures for illustration purposes only.

<i>Integrated Graphics</i>	<p>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>
<i>Up to three displays</i>	<p>Two video ports support two additional independent screens:                  1) HDMI 1.4b supports 1920 x 1080 @ 60 Hz or 3840 x 2160 @ 30 Hz                  2) VGA / D-Sub analog video supports 1920 x 1080 @ 60 Hz                  Multi-Monitoring modes as follow:                  Clone mode: All displays show the same content at 1920 x 1080.                  Extended mode: All displays show different content.</p>
<i>BIOS</i>	<p>AMI BIOS in 8 MByte EEPROM with SPI interface                  Supports Power-on-after-power-fail / always on                  Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states                  Supports hardware monitoring and Watchdog function                  Supports Firmware TPM v2.0 function</p>
<i>Memory</i>	<p>4 GB DDR4-2400 SO-DIMM SDRAM memory                  Supports a maximum of 32 GB per DIMM, maximum capacity: 64 GB                  Supports two unbuffered DIMM modules (no ECC or registered)</p>
<i>M.2 SSD</i>	<p>120 GB SSD card in M.2-2280 format                  Supports NVMe for access via PCI Express Gen. 2.0 X4</p>
<i>Supports 2,5" drive</i>	<p>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 of data transfer speed (6 Gbit/s)                  Supports one drive with up to 9.5 mm in height                  SATA cable pre-installed</p>
<i>Card Reader</i>	<p>Integrated card reader supports SD, SDHC and SDXC memory flash cards</p>
<i>Webcam</i>	<p>Integrated Full HD 2 megapixel camera (1920 x 1080)</p>
<i>Microphone Speakers</i>	<p>Front panel with integrated Electret Condenser Microphone and                  2x 2 W speakers</p>
<i>Audio</i>	<p>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>

© 2019 by Shuttle Computer Handels GmbH (Germany). All information subject to change without notice. Pictures for illustration purposes only.

<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>Model: AzureWave AW-CB209NF          Chipset: Realtek RTL8821CE          M.2-2230 (NGFF) expansion card          Connected with two internal antennas (via IPEX4)          Supports WiFi IEEE 802.11b/g/n/ac in the 2.4/5 GHz band, 1T1R          Max. 72.2 / 150 Mbps using 20 / 40 MHz bandwidth in n-mode          Max. 433.3 Mbps using 80 MHz bandwidth in ac-mode          Supports Bluetooth 4.2 in the 2.4 GHz band (BT 4.0 under Linux)</p>
<p><i>Front LEDs</i></p>	<p>Power LED (blue)          Hard disk LED (orange)          Battery LED (red)</p>
<p><i>Connectors left side</i></p>	<p>Power button          2x USB 3.1 Gen. 1 (= USB 3.0, max. 5 Gb/s)          SD card reader          Hole with power button</p>
<p><i>Connectors bottom side</i></p>	<p>HDMI 1.4b (supports digital video and digital audio)          VGA connector (D-Sub 15 pol., analog video)          2x USB 3.1 Gen. 1 (= USB 3.0, max. 5 Gb/s)          2x USB 2.0          2x COM/serial (D-Sub)          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 Perforation for optional WLAN/LTE antennas (diameter: 7 mm)</p>
<p><i>Connectors onboard</i></p>	<p>Internal USB 2.0 type A connector for a USB stick          Serial ATA (6 Gbps) data/power combo connector          3x USB 2.0 header (all occupied)          Microphone connector (2-pin, occupied)          Speakers connector (4-pin, occupied)          eDP connector (Embedded DisplayPort) - occupied by the display          LPC connector (occupied)          I2C connector for optional NFC accessory          CMOS battery connector (2-pin occupied)          System battery connector (14-pin, battery is optional)</p>
<p><i>Holes for optional Antennas</i></p>	<p>The chassis features two perforated 7 mm holes for optional antennas mounted with an (RP-)SMA connector for wireless network such as WLAN or WWAN (e.g. LTE)</p>

© 2019 by Shuttle Computer Handels GmbH (Germany). All information subject to change without notice. Pictures for illustration purposes only.

<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 % or 19V ± 5%.
<b>Included Accessories</b>	Quick Guide Driver DVD External Power Adapter (65W / 19V) with Power cord
<b>Optional Accessories</b>	1) <b>COM port adapter PCP21 or 2x PCP11</b> provides two more serial COM ports on the right side 2) <b>LI-ION battery PBAT01</b> 4S1P, 14.4V, 2100 mAh, 30.24 Wh, for 4~7h operation The battery PBAT01 is available optionally and with fully-configured systems only. 3) <b>NFC module</b> (on request only)
<b>Environmental criteria</b>	Operating temperature: 0~40 °C Humidity: 10~90 %
<b>Certification and Compliance</b>	EMI: CE, RED, FCC, RCM, VCCI Safety: CB, ETL Other compliances: RoHS, ErP Lot3, Energy Star
<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) 2014/30/EU relating to electromagnetic compatibility (EMC), (2) 2014/35/EU relating to Electrical Equipment designed for use within certain voltage limits (LVD), (3) 2009/125/EU relating to ecodesign requirements for energy-related products (ErP), (4) 2014/53/EU related to Radio and Telecommunications Terminal Equipment (RED)

### Shuttle XPC all-in-one Systems based on P51U Black

Name	Type	OS	SSD / HDD	RAM	Battery	UPC/EAN Code
<b>P51U</b>	Barebone	-	-	-	-	887993001791
<b>POS P510</b>	System, fixed	-	120 GB M.2 SSD	4 GB	-	4046047103454
<b>POS P511</b>	System, fixed	-	120 GB M.2 SSD	4 GB	PBAT01	4046047103461
<b>IoT P5100PA</b>	System, fixed	Windows 10 IoT	120 GB M.2 SSD	4 GB	-	4046047103478
<b>P51UXA</b>	System, BTO	-	BTO	BTO	BTO	-
<b>P5100T</b>	System, BTO	Windows 10	BTO	BTO	BTO	-



Shuttle XPC all-in-one Barebones – Comparison

Touch Display	Model	Processor	Colour	UPC Code
11.6" 1366 x 768 pixels Capacitive	<b>P20U</b>	Intel Celeron 3865U	Black	887993001487
15.6" 1366 x 768 pixels Resistive	<b>X50V6</b>	Intel Celeron 3865U	Black	887993001203
			White	887993001227
	<b>X50V6U3</b>	Intel Core i3-7100U	Black	887993001074
			White	887993001098
15.6" 1920 x 1080 pixels Capacitive	<b>P51U</b>	Intel Celeron 4205U	Black	887993001791
	<b>P51U3</b>	Intel Core i3-8145U	Black	TBA
19.5" 1600 x 900 pixels Capacitive	<b>P90U</b>	Intel Celeron 3865U	Black	887993001661
			White	887993001890
	<b>P90U3</b>	Intel Core i3-7100U	Black	887993001685
			White	887993001906
	<b>P90U5</b>	Intel Core i5-7200U	Black	887993001678

**P20U (11.6")**



**X50V6 (15.6")**



**P51U (15.6")**



**P90U (19.5")**



© 2019 by Shuttle Computer Handels GmbH (Germany). All information subject to change without notice . Pictures for illustration purposes only.