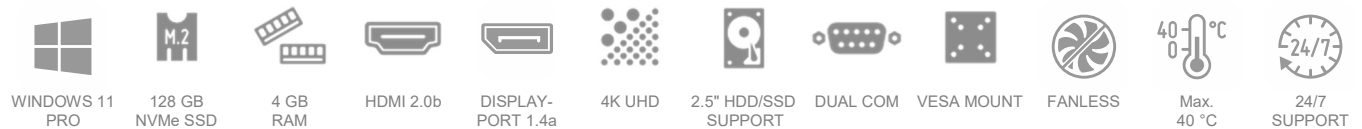


## SYSTEM XPC slim DL2000EP

System with Windows 11 Pro

### FANLESS 1-LITRE PC SYSTEM SUITABLE FOR 24/7 OPERATION

The Shuttle XPC slim System DL2000EP is a fixed configuration with Windows 11 Pro operating system based on the Shuttle XPC Barebone DL20N. With the built-in NVMe SSD card and the efficient 10 nm Intel Celeron processor (codenamed "Jasper Lake"), this slim PC works energy saving and pretty fast. The integrated graphics is based on Intel's powerful 11th gen. Intel UHD Graphics that supports hardware acceleration for 4K videos. Thanks to its passive cooling, the system is virtually noiseless, maintenance-free and approved for 24/7 nonstop operation. It's the ideal PC for applications such as Office, Thin Client, Digital Signage, POS and Multimedia.



#### SLIM DESIGN

- Slim 1.35-litre metal chassis, black
- Noiseless, fanless cooling system
- Dimensions: 190 x 165 x 43 mm (LWH)
- Including VESA mount (75/100 mm)
- Supports 24/7 Nonstop Operation
- Operating temperature: 0~40 °C (non-condensing)

#### OPERATING SYSTEM

- Windows 11 Pro (64-Bit)

#### PROCESSOR

- Intel Celeron N4505, Dual Core, 2,0-2,9 GHz, 4 MB Cache
- Soldered 10nm SoC processor "Jasper Lake" with 10 W TDP

#### GRAPHICS

- Integrated Intel Gen. 11 UHD graphics with 4K support
- Supports three independent displays

#### MEMORY

- 4 GB DDR4 SO-DIMM memory

#### STORAGE - SATA / M.2

- 128 GB SSD card in M.2-2280 format, supports PCIe/NVMe
- 1x 2.5" bay supports one SATA hard disk or SSD
- 1x M.2-2230E slot (supports optional WLAN cards)

#### CONNECTORS

- HDMI 2.0b
- DisplayPort 1.4a
- D-Sub/VGA
- SD card reader
- 2x USB 3.2 Gen2 (red)
- 2x USB 3.2 Gen1 (blue)
- 2x USB 2.0
- 1x internal USB 2.0
- 1x Intel Gigabit LAN (RJ45, i211)
- 2x COM port (1x RS232/422/485)
- 2x audio (line out, mic)
- Connector for external power button
- "Always-on" Jumper
- DC-input 12 V or 19 V

#### POWER SUPPLY

- External 40W/19V power adapter (DC-in supports 12 V and 19 V)

#### OPTIONAL ACCESSORIES

- Rackmount kit (PRM01)
- Cable for external power button (CXP01)
- DIN-Rail kit (DIR01)
- LTE-kit (WWN03)
- Stand (PS02)
- WLAN kit with two external antennas (WLN-M (ac)/WLN-M1 (ax))



### MODELS OF THE DL20N SERIES

Product	Type	Intel Processor	Operating System	M.2 SSD	RAM	UPC/EAN Code
<b>DL20N</b>	Barebone	Celeron N4505	—	—	—	887993003641
<b>DL20N6</b>	Barebone	Pentium Silver N6005	—	—	—	887993003665
<b>DL2000XA</b>	DL20N System without OS	Celeron N4505	—	128GB NVMe	4 GB	4046047103676
<b>DL2000EP</b>	DL20N System with Windows	Celeron N4505	Windows 11 Pro	128GB NVMe	4 GB	4046047103683

## PRODUCT FEATURES

### 1.3 L



#### Slim, stylish & robust chassis

The Shuttle XPC slim System DL2000EP features a slim 1.3-litre steel chassis, giving it the appropriate stability required for professional applications. The decorative silver stripe lets it also easily find a place in both home and office environments.



#### VESA mount

The supplied 75/100mm VESA mount allows for installation on to walls or monitors which is particularly interesting for the industry segment, company buildings and public institutions. Other than this, the chassis bears numerous threaded holes (M3) enabling it to be fitted almost anywhere.



#### Fanless, quiet and 24/7 approved

The Shuttle XPC slim System DL2000EP is officially approved for 24/7 permanent operation. It uses a passive thermal module which makes the system not only quiet, but also dust-free and virtually maintenance-free. Thanks to its low power consumption and completely fanless cooling, this PC runs highly reliably making it perfectly suitable for digital signage and POI/POS applications.



#### 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 (4) Power-On by LAN or (5) Power-On by Real-Time-Clock. As a matter of the nature of this function, it may fail after short power failures. This is why DL2000EP also comes with a hardware-based solution. By removing Jumper JP1 the system will start unconditionally once power is applied.



#### Dual 4K Display support

The Shuttle XPC slim System DL2000EP features two digital video outputs: HDMI 2.0b and DisplayPort 1.4a which both can run at 4K (3840 x 2160 / 2160p) high resolution at 60 Hz frames per second. Furthermore, the DL2000EP supports an additional D-Sub/VGA port.



#### External power button by separate remote line

If, because of space constraints (e.g. in case of fixed installation), the machine cannot be switched on by pressing the front power button, it can be powered on by a separate remote line. You will find an appropriate four-pin connector at the back panel of the DL2000EP (pitch 2.54 mm). Furthermore, this connector provides a Clear CMOS function and +5V DC voltage supply for external devices.



#### Two serial COM ports

The Shuttle XPC slim System DL2000EP features two serial RS232 COM ports on the back panel. Both ports support 5 V / 12 V auxiliary voltage and the left port is switchable to RS422 or RS485 mode. COM ports are a common interface for applications in industrial automation, scientific analysis and POS.

+5V voltage (2)  (4) Power Button  
Clear CMOS (1)  (3) Ground



#### Intel Gigabit LAN Network

The Shuttle XPC slim System DL2000EP supports Gigabit LAN with Intel network adapters, which are popular for their excellent performance and driver compatibility and are the preferred choice for professional environments.



#### Compact 19V power adapter

The external fanless 40 W power adapter can easily be hidden behind the desk thanks to its diminutive size. The power adapter has 19V (max. 2.1A), but the DL2000EP can also be operated with a 12V (max. 3.33A) power source.

## Front and Back Panel

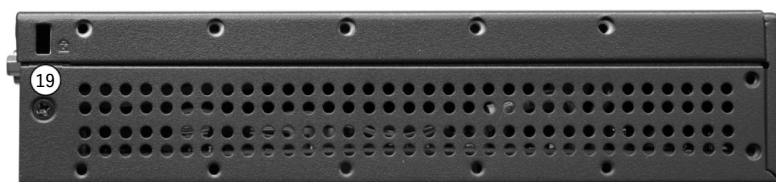
Front panel



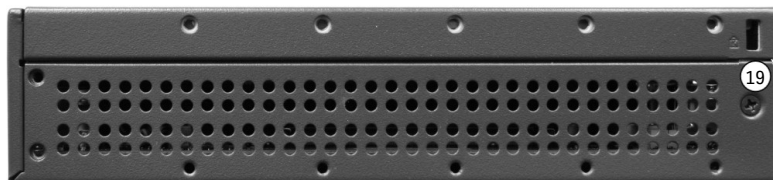
Back panel



Left Side



Right Side



VESA mounting



1. Microphone input
2. Headphones output
3. LED indicator for power state
4. LED indicator for storage activity
5. Power button
6. SD card reader
7. 2x USB 3.2 Gen 2 port (red)
8. 2x perforation for optional WLAN antennas
9. COM 1 port supports RS232/RS422/RS485
10. COM 2 port supports RS232
11. 4-pin connector (2.54 mm pitch) for external power button, Clear CMOS button and 5V DC voltage
12. 2x USB 2.0 port (black)
13. 2x USB 3.2 Gen 1 port (blue)
14. DisplayPort 1.4a audio/video output
15. HDMI 2.0b port audio/video output
16. D-Sub / VGA video output
17. RJ45 Gigabit LAN port
18. DC-in connector for power adapter

19. Hole for the Kensington Lock
20. VESA mount (two parts with screws)

## SHUTTLE XPC SLIM SYSTEM DL2000EP – SPECIFICATIONS

<b>FANLESS &amp; SILENT</b>	<p>Completely fanless, virtually noiseless</p> <p>Passive cooling through convective heat transfer</p> <p>Perfect to be used in noise-sensitive environments</p> <p>Fanless means less dust and thus virtually no maintenance required</p>
<b>24/7 NONSTOP OPERATION</b>	<p>This device is approved for 24/7 permanent operation.</p> <p>Requirements:</p> <ul style="list-style-type: none"> <li>- Free air circulation around the PC must be guaranteed.</li> <li>- Ventilation holes must be kept clear.</li> </ul>
<b>CHASSIS</b>	<p>Slim PC with black chassis made of steel</p> <p>Dimensions: 190 x 165 x 43 mm (LWH) = 1.35-litre</p> <p>Weight: 0.8 kg net and 1.95 kg gross</p> <p>Two holes for Kensington Lock and numerous threaded holes (M3) at both sides of the chassis</p>
<b>OPERATION POSITION</b>	<p>Operation Position</p> <ol style="list-style-type: none"> <li>1) Horizontal</li> <li>2) Vertical with mounted feet.</li> </ol> <p>These feet can be purchased as optional accessory PS02.</p> <ol style="list-style-type: none"> <li>3) Vertical (e.g. VESA-mounted behind an appropriate monitor)</li> </ol> <p>In vertical position, the front USB ports should point upward.</p> <p>Ventilation holes must not be blocked to ensure sufficient cooling.</p>
<b>OPERATION SYSTEM</b>	Windows 11 Pro (64-Bit)
<b>PROCESSOR</b>	<p>Intel® Celeron® Processor N4505, Dual Core</p> <p>CPU clock frequency: 2.0 GHz, max. Turbo frequency: 2.9 GHz</p> <p>Code name: "Jasper Lake"</p> <p>10 nm structure, FCBGA1338 package (soldered)</p> <p>CPU cores / Threads: 2 / 2</p> <p>L2 Cache: 4 MB</p> <p>Thermal Design Power (TDP): 10 W</p> <p>Supports x86-64, AES-NI, VT-x (EPT), VT-d, SSE4.2, AES</p> <p>System-on-Chip processor (SoC) with integrated graphics processor, no chipset required</p>
<b>INTEGRATED GRAPHICS</b>	<p>The Graphics Processing Unit (GPU) is integrated in the processor</p> <p>Intel® UHD Graphics (11th Gen), GPU frequency: 450-750 MHz</p> <p>Supports DirectX 12, OpenGL 4.5, OpenCL 1.2, Intel Quick Sync Video, Intel Clear Video (HD) Execution Units (EU): 16</p> <p>Triple Display Support via three video outputs:</p> <ul style="list-style-type: none"> <li>- HDMI 2.0b: max. 4096 x 2160 @ 60 Hz</li> <li>- DisplayPort 1.4a: max. 4096 x 2160 @ 60 Hz</li> <li>- D-Sub/VGA: max. 1920 x 1200 resolution @ 60 Hz</li> </ul> <p>Supports two digital displays and one analog display simultaneously.</p> <p>The D-Sub/VGA connector does not support the Hot Plug feature.</p>
<b>UEFI FIRMWARE</b>	<p>16 MB Flash ROM with AMI's Aptio UEFI BIOS Firmware</p> <p>Based on the Unified Extensible Firmware Interface (UEFI)</p> <p>Supports Power-fail-resume / AC power-on state / always-on / always-off [3]</p> <p>Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states</p> <p>Supports boot up from external flash memory cards</p> <p>With embedded Firmware TPM v2.0 (fTPM)</p> <p>CMOS battery (type CR2032)</p>
<b>MEMORY</b>	<p>4 GB DDR4 RAM module in SO-DIMM format</p> <p>Supports max. 16 GB per DIMM</p> <p>Maximum total size: 16 GB (either 1x 16 GB or 2x 8 GB)</p>
<b>2.5" DRIVE BAY</b>	<p>Supports one drive in 6.35 cm / 2.5" format (hard disk or SSD)</p> <p>Serial ATA III Interface with up to 600 MB/s transfer speed</p> <p>Max. height 12.5 mm</p> <p>Pre-installed SATA cable (data/power)</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p>
<b>M.2 SSD CARD</b>	<p>128 GB SSD card in M.2-2280 format</p> <p>PCI-Express interface supports NVMe</p>

<b>M.2-2230E SLOT FOR OPTIONAL WLAN CARD</b>	<p>Interfaces: PCI-Express Gen. 2.0 X1 und USB 2.0</p> <p>Supports M.2 cards with a width of 22 mm and a length of 30 mm (type 2230)</p> <p>Supports WLAN expansion cards (optional Shuttle accessory: WLN-M / -M1)</p>
<b>AUDIO</b>	<p>Realtek ALC897 / ALC662 / ALC888S Audio Codec</p> <p>Two analog audio connectors (3.5 mm):</p> <ol style="list-style-type: none"> <li>1) Line out (head-phones)</li> <li>2) Microphone input</li> </ol> <p>Digital multi-channel audio output: via HDMI and DisplayPort</p>
<b>CARD READER</b>	<p>Integrated card reader</p> <p>supports standard SD, SDHC and SDXC memory flash cards</p> <p>Controller: Genesys GL9750</p>
<b>WIRED NETWORK</b>	<p>RJ45 connector supports Gigabit LAN at 10/100/1000 Mbit/s.</p> <p>Intel i211 Ethernet Controller with MAC, PHY and PCIe interface</p> <p>Supports Wake-on-LAN</p>
<b>LEDs &amp; BUTTONS</b>	<p>Power button</p> <p>Power LED (blue)</p> <p>HDD LED (yellow)</p>
<b>FRONT PANEL CONNECTORS</b>	<p>2x USB 3.2 Gen 2 Type A (red)</p> <p>SD card reader</p> <p>Audio line-out (headphones)</p> <p>Microphone input</p>
<b>BACK PANEL CONNECTORS</b>	<p>HDMI 2.0b digital video and audio output</p> <p>DisplayPort 1.4a digital video and audio output</p> <p>D-Sub/ VGA analog video output (15-pin) - no hot plug</p> <p>2x USB 3.2 Gen 1 Type A (blue)</p> <p>2x USB 2.0 Type A</p> <p>Gigabit network (LAN, RJ45)</p> <p>2x RS232 serial port, 9-pin D-Sub (support of an auxiliary voltage of 5/12 V, the left port is switchable to RS422 / RS485) [4]</p> <p>DC input for the external power adapter</p> <p>4-pin connector (2.54 mm pitch) supports</p> <ul style="list-style-type: none"> <li>- external power-on button</li> <li>- Clear CMOS function</li> <li>- +5V DC voltage for external components</li> </ul> <p>2x perforation for optional Wireless LAN antennas</p>
<b>OTHER ONBOARD CONNECTORS</b>	<p>Connectors COM1/COM2 for serial ports (occupied)</p> <p>Jumper JP2 for power-on-after-power-fail (hardware solution) [3]</p> <p>USB 2.0 header (4-pin) required for WWN03 accessory</p>
<b>POWER SUPPLY</b>	<p>External 40 W AC/DC power adapter (fanless)</p> <p>AC Input: 100 ~ 240 V AC, 50 ~ 60 Hz</p> <p>DC Output: 19 V / 2.1 A</p> <p>Automatic AC voltage adjust</p> <p>Dimensions: ca. 95 x 42 x 29 mm (LWH)</p> <p>DC cable length: ca. 170 cm</p> <p>AC cable length: ca. 170 cm (with 2-pin Europlug)</p>
<b>DC INPUT CONNECTOR</b>	<p>DC Connector: 5.5 / 2.5 mm (outer/inner diameter)</p> <p>The DC-input of the computer supports an external power source with either 12 V ±5% (max. 3.33 A) or 19 V ±5% (max. 2.1 A).</p>
<b>SUPPLIED ACCESSORIES</b>	<p>Multi-language user guide (EN, DE, FR, ES, JP, KR, SC, TC)</p> <p>VESA mount for 75 / 100 mm standard (two metal brackets)</p> <p>Four screws M3 x 5 mm (screws together VESA mount and PC)</p> <p>Four screws M4 x 10 mm (to affix VESA mount on the PC)</p> <p>Four screws M3 x 4 mm (to mount a 2.5" storage into the bay)</p> <p>Driver DVD (Windows 64-bit)</p> <p>External 40 W power adapter with power cord (Europlug)</p>



<b>OPTIONAL ACCESSORIES</b>	<p><b>PS02:</b> optional stand for vertical operation  <b>CXP01:</b> adapter cable for external power button  <b>PRM01:</b> 2U rack-mount front plate for two Shuttle XPC slim PCs  <b>DIR01:</b> DIN-Rail mounting kit  <b>WLN-M</b> (802.11ac/Wifi 5) and <b>WLN-M1</b> (802.11ax/Wifi 6): WLAN module in M.2-2230 format with two external antennas supports WLAN and Bluetooth  <b>WWN03:</b> LTE kit with adapter card, 2 antennas and antenna cables. Supports one M.2 LTE module and one nano SIM card [1]</p>
<b>ENVIRONMENTAL SPECIFICATIONS</b>	<p>Operating temperature range: 0 ~ 40 °C          Relative humidity range: 10 ~ 90 % (non-condensing)</p>
<b>CERTIFICATIONS / COMPLIANCE</b>	<p>EMI: FCC, CE, BSMI, RCM, VCCI          Safety: CB, BSMI, ETL          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)</p>

### [1] Optional LTE support

Shuttle provides the optional "Shuttle Accessory WWN03" which consists of an adapter card, two antennas plus 20 cm antenna cables. The WWN03 adapter card occupies the 2.5" drive bay, so that no more 2.5" SATA device can be installed. The 3G/LTE card must have M.2-3042 Key B format with MHF IV (I-PEX4) connectors for the antenna. In addition, it supports one Nano-SIM card (Mini and Micro format is not supported). The required 3G/LTE card and SIM card are not included in WWN03.

### [2] 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: 1 m, DisplayPort (male, 20p) to HDMI-A (male, 19p)

DELOCK 82435: 5 m, DisplayPort (male, 20p) to DVI-D (male, 24p)

The integrated graphics automatically detects the connected display and puts out the appropriate electric signal - either through 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.

### [3] 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 or (3) keep system turned off. As a matter of the nature of this function, it may fail after short power failures. This is why the Shuttle XPC slim Barebone DL10J also comes with a hardware-based solution. By removing Jumper JP1 (on the mainboard behind the D-Sub/VGA port) the system will start unconditionally once power is supplied.

### [4] Serial Ports

This PC features two serial RS232 ports with 9-pin D-Sub connectors on the back panel. The left COM port (COM1) can also be configured as RS422 and RS485 in the BIOS setup.

Pin 9 of the D-Sub COM-Port is a multi-functional signal. Based on the Jumper JP2 configuration on the mainboard, it can be configured as Ring Indicator (RI) or external power supply with a voltage level of either 5 V or 12 V. Each COM port can be configured separately. The maximum current is 500 mA per connector.

## Drawings of Shuttle DL20N-Series

