

## SYSTEM XPC slim DL3000EP

Intel N100 CPU, 8 GB RAM, 128 GB SSD, Win10

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

This fanless fully-configured PC system is based on the Shuttle XPC slim Barebone DL30N with an energy-efficient Intel 12th-Gen "Alder Lake-N" processor. Two Intel 2.5G LAN ports provide excellent network connectivity and the integrated graphics is based on Intel's powerful Intel UHD Graphics that supports hardware acceleration for 4K videos. This Slim-PC works virtually noiseless, offers good processor performance and comes with a wide range of connectivity options at a moderate price. It is ideal for everyday tasks such as office and multimedia applications.



Alder Lake-N  
SOC CPU



HDMI 2.0b



DISPLAY-  
PORT 1.4a



VGA Port



Dual LAN  
2.5 Gbps



DUAL COM



128 GB  
NVMe SSD



2.5" HDD/SSD  
SUPPORT



VESA MOUNT



FANLESS



Max.  
40 °C



24/7  
SUPPORT

### 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 10 IoT Enterprise LTSC 2021 (64-bit)

### PROCESSOR

- Intel N100 processor, 4 cores, 3.4 GHz turbo clock, TDP: 6W
- Code name "Alder Lake-N", Intel 7 process technology (10 nm)
- Soldered SoC processor with fanless cooling

### GRAPHICS

- Integrated Intel UHD graphics with 4K support
- Supports three independent displays (HDMI, DP, VGA)

### RAM MEMORY

- 8 GB DDR5-4800 SO-DIMM module

### STORAGE – SATA / M.2

- 128 GB M.2 SSD (supports PCIe/NVMe)
- 1x 2.5" bay supports SATA hard disk or SSD, max. 9.5 mm
- 1x M.2-2230E slot (supports optional WLAN cards)

### CONNECTORS

- HDMI 2.0b
- DisplayPort 1.4
- D-Sub/VGA
- 8x USB 3.2 Gen1 (blue)
- 2x Intel 2.5 GbE LAN (i226)
- 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 65W/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)
- 4G/LTE-kit (WWN03)
- Stand (PS02)
- WLAN-ax kit with two external antennas (WLN-M1)



### MODELS OF THE DL30N SERIES

Product	Type	Processor	RAM	SSD	Operating System	UPC/EAN Bar Code
<b>DL30N</b>	Barebone	Intel N100	—	—	—	887993006093
<b>DL3000XA</b>	System	Intel N100	8 GB DDR5	128 GB M.2 NVMe	—	4046047104154
<b>DL3000EP</b>	System	Intel N100	8 GB DDR5	128 GB M.2 NVMe	Windows 10 IoT LTSC	4046047104161

## Front and Back Panel

Front panel



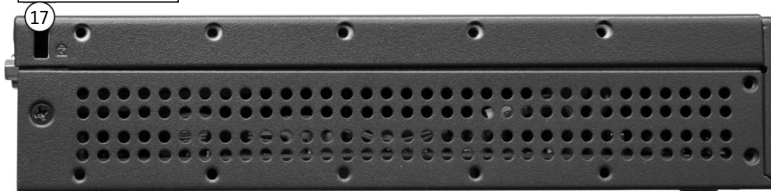
1. Microphone input
2. Headphones output
3. LED indicator for power state
4. LED indicator for storage activity
5. Power button
6. 4x USB 3.2 Gen 1 port (blue, max. 5 Gbps)

Back panel

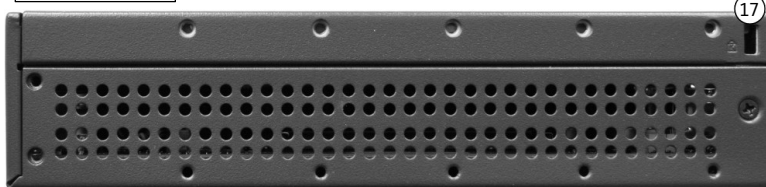


7. 2x perforation for optional WLAN antennas
8. COM 1 port supports RS232/RS422/RS485
9. COM 2 port supports RS232
10. 4-pin connector (2.54 mm pitch) for external power button, Clear CMOS button and 5V DC voltage
11. 4x USB 3.2 Gen 1 port (blue, max. 5 Gbps)
12. DisplayPort 1.4a audio/video output
13. HDMI 2.0b port audio/video output
14. D-Sub / VGA video output
15. 2x RJ45 2.5G LAN port
16. DC-in connector for power adapter supports 12V and 19V DC

Left Side



Right Side



Connector for an external power button

17. Hole for the Kensington Lock

VESA mounting



18. VESA mount (two parts with screws)

## SHUTTLE XPC SLIM SYSTEM DL3000EP – 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> <li>- Any installed disk must also be approved for permanent operation by its manufacturer</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 2.1 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>1) Horizontal</p> <p>2) Vertical with mounted feet.</p> <p>These feet can be purchased as optional accessory PS02.</p> <p>3) Vertical (e.g. VESA-mounted behind an appropriate monitor)</p> <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 10 IoT Enterprise LTSC 2021 (64-bit)
<b>PROCESSOR</b>	<p>Model: Intel® Processor N100</p> <p>Max. Turbo clock frequency: 3.4 GHz</p> <p>Code name: "Alder Lake-N"</p> <p>10 nm structure, FCBGA1338 package (soldered)</p> <p>CPU cores / Threads: 4 / 4</p> <p>L2 Cache: 6 MB</p> <p>Thermal Design Power (TDP): 6 W</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, GPU frequency: max. 750 MHz</p> <p>Supports DirectX 12.1, OpenGL 4.6, OpenCL 3.0, Intel Quick Sync Video</p> <p>Execution Units (EU): 24</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>32 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 <b>[3]</b></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) <b>[5]</b></p> <p>CMOS battery (type CR2032)</p>
<b>MEMORY (RAM)</b>	<p>8 GB DDR5-4800 memory module in SO-DIMM form factor (262-pins)</p> <p>Supports one RAM module with max. 16 GB capacity</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 9.5 mm</p> <p>Pre-installed SATA cable (data / power)</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p>
<b>M.2 SSD CARD</b>	128 GB SSD card in M.2-2280 format
<b>M.2-2230E SLOT FOR OPTIONAL WLAN CARD</b>	<p>Interfaces: PCI-Express Gen. 3.0 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-M1)</p>

<b>AUDIO</b>	<p>Realtek 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>DUAL 2.5G NETWORK</b>	<p>Two RJ45 connectors support LAN at 100/1000/2500 Mbit/s.</p> <p>2x Intel i226-LM Ethernet Controller</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>4x USB 3.2 Gen 1 Type A (blau, max. 5 Gbps)</p> <p>Audio 3.5 mm line-out (headphones)</p> <p>Microphone 3.5 mm 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 <b>[2]</b></p> <p>D-Sub/ VGA analog video output (15-pin) - no hot plug</p> <p>4x USB 3.2 Gen 1 Type A (blue, max. 5 Gbps)</p> <p>2x LAN port 2.5 Gbps (Intel i226-LM, 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) <b>[4]</b></p> <p>DC input for the external power adapter (supports 12V and 19V)</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 JP1 for power-on-after-power-fail (hardware solution) <b>[3]</b></p> <p>USB 2.0 header CN1 (4-pin) required for WWNO3 accessory</p>
<b>POWER SUPPLY</b>	<p>External 65 W AC/DC power adapter (fanless)</p> <p>AC Input: 100 ~ 240 V AC, 50 ~ 60 Hz, max. 1.6 A</p> <p>DC Output: 19 V, max. 3.42 A, max. 65 W</p> <p>Automatic AC voltage adjust</p> <p>DC cable length: ca. 180 cm</p> <p>AC cable length: ca. 180 cm (3-pin Micky MM C6 and Schuko earthed safety plug)</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. 5.33 A) or 19 V ±5% (max. 3.42 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>Two screws M2 (to mount some M.2 cards)</p> <p>Driver DVD (Windows 64-bit)</p> <p>External 65 W power adapter with power cord (with protective-earth contacts)</p>
<b>OPTIONAL ACCESSORIES</b>	<p><b>PS02:</b> optional stand for vertical operation</p> <p><b>CXP01:</b> adapter cable for external power button</p> <p><b>PRM01:</b> 2U rack-mount front plate for two Shuttle XPC slim PCs</p> <p><b>DIR01:</b> DIN-Rail mounting kit</p> <p><b>WLN-M1:</b> WLAN module in M.2 format supports Wi-Fi 6 (IEEE 802.11ax) and BT 5.2 including two external antennas and cables</p> <p><b>WWNO3:</b> LTE kit with adapter card, 2 antennas and antenna cables. Supports one M.2 LTE module and one nano SIM card <b>[1]</b></p>
<b>ENVIRONMENTAL SPECIFICATIONS</b>	<p>Operating temperature range: 0 ~ 40 °C</p> <p>Relative humidity range: 10 ~ 90 % (non-condensing)</p>

## CERTIFICATIONS / COMPLIANCE

EMI: CE, UKCA, FCC, RCM, VCCI, BSMI

Safety: CB IEC 60950-1/62368-1, cTUVus (UL 62368-1), 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)

### [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 this PC 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

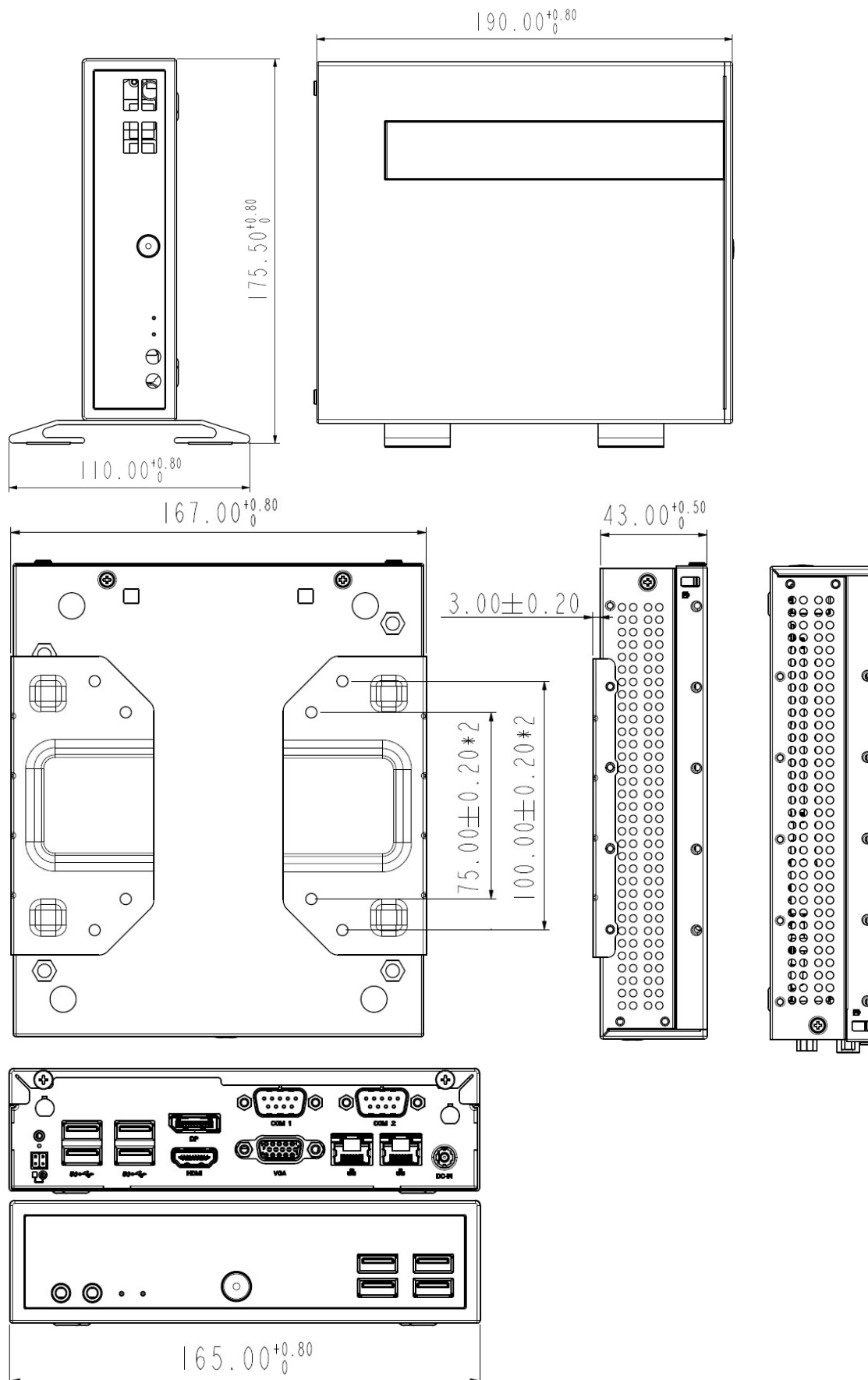
This PC features two serial RS232 ports with 9-pin D-Sub connectors on the back panel. The left COM port (COM1) can also be configured as RS422 and RS485 in the BIOS setup.

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.

### [5] TPM Function

This product features Firmware-TPM function (fTPM) v2.0. Besides this, it is prepared for a hardware TPM chip which can be fitted by factory on request if required.

## SHUTTLE XPC SLIM SYSTEM DL3000EP – Technical Drawing



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