

DL20N

SLIM PC



PROCESSOR	Intel® Jasper Lake N4505 Dual Core processor	
MEMORY	2 x DDR4 2933 MHz SODIMM slots Supports dual channel up to 16GB (8GB x 2)	
VIDEO GRAPHICS	Intel HD graphics	
VIDEO OUTPUT	HDMI 2.0b + DisplayPort + VGA, Supports triple independent displays	
AUDIO	Realtek ALC897/ALC662/ALC888S, 2 channel HD audio	
ETHERNET	Intel i211 Gigabit LAN 10/100/1000 MB/sec	Supports Wake on LAN function
STORAGE INTERFACE	SATA III 6 GB/s for HDD/SSD SD Card Reader	
FRONT PANEL	(1) Power Button (1) Power LED (1) HDD LED (2) USB 3.2 Gen 2	(1) SD Card Reader (SD card boot not supported) (1) MIC-in (1) Headphone out
BACK PANEL	(1) RJ45 Gigabit LAN (1) HDMI 2.0b (1) DisplayPort 1.4a (1) VGA (2) USB 3.2 Gen 1 (2) USB 2.0	(1) External power on/Clear CMOS header (2) Antenna hole (1) DC-in (1) RS232/RS422/RS485 (1) RS232
DRIVE BAYS	(1) 2.5" HDD / SSD drive bay (max 12.5mm)	
DIMENSIONS	7.5(L) x 6.5(W) x 1.7(H) inches	
POWER	Input: 100 - 240V AC Output: 19V 2.1A or 12V/3.33A DC	40W 19V power adapter
ACCESSORIES	Quick Guide Screw pack 40W power adapter Power cord WLN-M (optional WLAN w/ antenna)	VESA mount VESA mount screws Driver DVD WWN03 (optional LTE kit w/ antenna)
EXPANSION SLOT	(1) M.2 2280 Type M	(1) M.2 2230 Type E key socket
OS SUPPORT	Windows 10 64bit, Windows 11 64 bit, Linux 64 bit	

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CHASSIS	<p>Black slim type metal chassis</p> <p>Kensington lock slots on the sides as part of anti-theft system</p> <p>Dimensions: 7.5 (L) x 6.5 (W) x 1.7 (H) inches</p> <p>Weight: 1.76 LBS (net) / 4.3 LBS (gross)</p>
24/7 NONSTOP OPERATION	<p>Approved for 24/7 permanent operation</p> <p>Free air circulation around the PC needed</p> <p>Ventilation holes must be kept clear</p> <p>Any installed disk must also be approved for permanent operation by manufacturer</p>
OPERATION POSITION	<p>1) Horizontal</p> <p>2) Vertical with mounted feet (optional accessory PS02)</p> <p>3) Vertical (ie VESA mounted)</p> <p>In vertical position, the USB points should point upward</p> <p>Ventilation holes must not be blocked to ensure sufficient cooling</p>
BIOS	<p>AMI Aptio BIOS, 16 MB Flash-EPROM</p> <p>Embedded Firmware-TPM (fTPM) v2.0 [5]*</p> <p>Supports boot up from external USB flash memory</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p> <p>Supports Wake-on-LAN (WOL) from S3, S4, S5 ACPI states</p> <p>Supports power on after power failure [3]*</p> <p>CMOS battery (CR2032 type)</p>
POWER SUPPLY	<p>External 40W AC/DC power adapter (fanless)</p> <p>Automatic AC voltage adjust</p> <p>AC input voltage: 100 - 240V, 50 - 60 Hz</p> <p>Output: 19V DC 2.1A</p> <p>DC connector: 5.5/2.5mm (outer/inner diameter)</p> <p>DC-input: 12 V ±5% (max. 2.1 A) or 19 V ±5% (max. 3.33 A)</p>
OPERATING SYSTEM	<p>The system comes without an operating system installed.</p> <p>Compatibility: Windows 10 (64bit), Windows 11 (64bit), Linux (64bit)</p>
PROCESSOR SUPPORT	<p>Intel® Jasper Lake Celeron® N4505 processor</p> <p>Max supported processor power consumption (TDP): 10W</p> <p>10nm structure (soldered), 2 cores and 2 threads, up to 4MB of L2 cache</p> <p>CPU clock frequency: 2.0 GHz, max. Turbo frequency: 2.9 GHz</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>
SYSTEM COOLING	<p>Completely fanless, perfect for noise-sensitive environments</p> <p>Passive cooling through convective heat transfer</p> <p>Less dust, virtually no maintenance required</p>
MEMORY SUPPORT	<p>2 x 260 pin SODIMM slots</p> <p>Supports DDR4 2933 MHz memory (PC3-23466U) SDRAM at 1.2V</p> <p>Supports Dual Channel mode</p> <p>Supports a max. of 16GB per DIMM (1 x 16GB or 2 x 8GB)</p> <p>Supports two unbuffered DIMM modules (no ECC)</p>
DRIVE BAYS	<p>1 x 2.5" drive bay supports one hard disk or SSD drive, max height 12.5 mm</p> <p>Pre-installed SATA cable (data/power)</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p>
M.2 SLOTS	<p>M.2 2280 M slot provides the following interfaces:</p> <p>PCI-Express Gen 3.0 X2 and SATA v3.0 (6 GB/s) interface</p> <p>Supports M.2 cards with a width of 22 mm and a length of 42, 60, or 80 mm (type 2242/2260/2280).</p> <p>Supports M.2 SSDs (BM key) with SATA or NVMe PCI-Express SSDs (M key).</p>
AUDIO	<p>Realtek® ALC897/ALC662/ALC888S audio codec</p> <p>Two analog audio connectors (3.5 mm) on the front panel:</p> <p>Line-out (headphones), Microphone input</p> <p>Digital multi-channel audio output (HDMI and DisplayPort)</p>

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INTEGRATED GRAPHICS	<p>Intel® UHD graphics (11th Gen), GPU integrated in processor, GPU frequency: 450 - 750 MHz Supports DirectX 12, OpenGL 4.5, OpenCL 1.2, Intel Quick Sync Video, Intel Clear Video (HD) Execution Units (EU): 16</p> <p>This model has triple video outputs: -HDMI 2.0b: max 4096 x 2160, 60 Hz -DisplayPort 1.4a: max 4096 x 2160, 60 Hz -D-sub/VGA: max 1920 x 1200, 60 Hz</p> <p>Supports two digital displays and one analog display simultaneously D-sub/VGA connector does not support the Hot Plug feature</p>	
WIRED NETWORK	<p>RJ45 connector supports Gigabit LAN at 10/100/1000 Mb/s Intel i211 ethernet controller with MAC, PHY, PCIe interface Supports Wake-on-LAN</p>	
CARD READER	<p>Integrated card reader supports SD, SDHC, SDXC memory flash cards Supports boot from SD card Realtek RTS5227S media processor</p>	
FRONT PANEL CONNECTORS	<p>Microphone input Headphone output (line-out) SD Card Reader 2 x USB 3.2 Gen 2</p>	<p>Power button Power indicator (Blue LED) Hard disk drive indicator (Yellow LED)</p>
BACK PANEL CONNECTORS	<p>HDMI 2.0b (video/audio) DisplayPort 1.4a VGA connector (15-pin, no hot plug) USB 3.2 Gen 1 x 2 USB 2.0 x 2 Kensington Lock x 2</p>	<p>Clear CMOS button/external Power on button Gigabit LAN (RJ45) WLAN antenna holes x 2 RS232 x 2 (5/12V, 1 x RS422/RS485 switchable) [4]* DC-input connector for external power adapter</p>
OTHER CONNECTORS (ONBOARD)	<p>COM1/COM2 connectors for serial ports USB 2.0 header (4-pin, for WWN03)</p>	<p>Jumper JP2 for power on after power failure (hardware solution) [3]*</p>
INCLUDED ACCESSORIES	<p>XPC installation guide Driver DVD SATA and power cables Heatsink compound</p>	<p>External 90W power adapter with cord VESA mount (75/100mm standard) Screw pack</p>
OPTIONAL ACCESSORIES	<p>WLN-M (WLAN module) Vertical stand (PS02) LTE kit (WWN03) [1]*</p>	<p>2U rack mount front plate for two slim PCs (PRM01) Adapter cable for external power button (CXP01) DIN-Rail mounting kit (DIR01)</p>
ENVIRONMENTAL CRITERIA	<p>Operating temperature: 0 - 40°C</p>	<p>Humidity: 10 - 90% (non-condensing)</p>
CERTIFICATIONS	<p>EMI: FCC, CE, BSMI, RCM, VCCI Safety: ETL, CB, BSMI</p> <p>Other: RoHS, Energy Star, ErP</p> <p>This model is classed as a technical information equipment (ITE) in class B and is intended for use in living rooms and offices. The CE mark approves 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 eco-design requirements for energy related products (ErP)</p>	

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[1] OPTIONAL LTE SUPPORT

The optional WWN03 accessory consists of an adapter card, two antennas, and 20 cm antenna cables. The WWN03 adapter card occupies the 2.5" drive bay, a 2.5" SATA device cannot be installed if it is used. The 3G/LTE card must have M.2 3042 B key format with MHF IV (I-PEX4) connectors for the antenna. A Nano-SIM card is supported (mini and micro format not supported) and the required 3G/LTE and SIM card are not included in the WWN03 kit.

[2] HOW TO CONVERT DISPLAYPORT TO HDMI/DVI

The DisplayPort output can be converted into a HDMI or DVI output using an additional passive adapter cable.

The integrated graphics automatically detects the connected display and outputs the appropriate electric signal - either 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 behavior after a power failure: (1) unconditional power on, (2) restore former status, or (3) keep system turned off. This function may fail after short power failures, but the DL20N comes with a hardware based solution in these cases. By removing the 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 COM1 port can also be configured as RS422 and RS485 in the BIOS setup. 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 5V or 12V (each COM port can be configured separately; the maximum current is 500 mA per connector).

[5] TPM FUNCTION

This model features Firmware-TPM (fTPM) v2.0. A hardware TPM chip can be fitted on request by the factory if required.

BIOS DOWNLOADS: <http://global.shuttle.com/products/productsDownload?productId=2605>

SUPPORT LIST: <http://global.shuttle.com/products/productsSupportList?productId=2605>

FAQ LIST: <http://global.shuttle.com/support/faq>

PRODUCT WARRANTY: <https://us.shuttle.com/barebone-support/policy-xpc-barebone/>

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Front View



- | | | | |
|---|-------------------|---|------------------------|
| 1 | Microphone input | 5 | Power Button |
| 2 | Headphones output | 6 | SD Card Reader |
| 3 | Power LED | 7 | USB 3.2 Gen 2 port x 2 |
| 4 | Hard Disk LED | | |

Back View



- | | | | |
|---|--------------------------|---|--------------------------|
| A | WLAN antenna hole x 2 | G | COM1 (RS232/RS422/RS485) |
| B | External 4-pin connector | H | D-Sub/VGA |
| C | USB 2.0 x 2 | I | COM2 (RS232) |
| D | USB 3.2 Gen 1 x 2 | J | RJ45 Gigabit LAN |
| E | HDMI 2.0b | K | DC-in |
| F | DisplayPort 1.4a | | |

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INTEL[®] JASPER LAKE PLATFORM TECHNOLOGY

Equipped with an Intel[®] Jasper Lake processor, the low-power consumption 10nm chip provides performance improvements of up to 35% over Gemini Lake chips and up to a 30% increase in IPC (instructions per clock) with support for DDR4 memory up to 16gb for smooth operation.



VESA MOUNTABLE

The supplied 75/100mm VESA mount allows for installation of the DL20N on walls or monitors, for use in company buildings, public institutions, or other industry buildings. With a thickness of 43mm, it allows for versatile integration into hardware systems and well suited for areas with limited space.



4K ULTRA HD WITH TRIPLE DISPLAY SUPPORT

The DL20N features a HDMI 2.0b, DisplayPort 1.4a, and VGA outputs to support triple independent displays with resolutions up to 4096 x 2160/3840 x 2160 , providing dynamic visualization for multi-tasking and digital signage applications.



NONSTOP

24/7 NONSTOP OPERATION

Approved for 24/7 operation, a low power consumption design allows for stable operation to meet the long-term demands of digital signage or other vertical applications.



FANLESS COOLING

A passive thermal cooling system reduces power consumption required by a fan as well as the cost of replacing fans on-site. Use solid state disks for an operational platform completely free of noise.

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ACCESSORY	CXP01
DESCRIPTION	Connector for an external power button, includes fitting connection that requires a push button switch
PORTS	Dual header connector, 2.54mm pitch Two female crimp contact pins, tin-plated Outer Diameter: 6.5 mm Two-pole cable: 2 x 0.34 mm
REMARKS	Cable provides tin-plated leads for a push button switch Connection to the external power button can be screw-type or soldering



ACCESSORY	PS02
DESCRIPTION	The PS02 stand is required for placing 1.3L slim PC models into a vertical orientation.
COMPATIBILITY	DX30, DL10J, DS61, DS81, DH110, DH110SE, DH170, DQ170, DH270, DH310, DH370, DH02U, DH410, DH410S, NC02U, NC03U, NC10U



ACCESSORY	WLN-M
DESCRIPTION	The WLN-M wireless LAN kit can be used to equip XPC cube and slim series models with the wireless LAN standard 802.11 n/ac at 2.4/5
REMARKS	M.2 2230 (NGFF) WLAN card, Antenna cable (XPC slim) x 2, Antenna cable (XPC cube) x 2, Dipole antenna x 2, Quick Guide, Driver DVD
OS SUPPORT	Windows 7, Windows 8.1, Windows 10, Linux (32/64 bit)



ACCESSORY	WWN03
DESCRIPTION	The WWN03 accessory kit allows the DS10U series to be upgraded with a 4G/LTE function for mobile network.
REMARKS	If this accessory kit is installed, it will occupy the 2.5" HDD rack; a M.2 SSD will have to be used for storage instead. Only Nano SIM (12.3 mm x 8.8 mm) cards are compatible with this kit.

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DL20N vs DL10J

SLIM PC



MODEL	DL20N	DL10J
PROCESSOR SUPPORT	max TDP 10W 10nm Jasper Lake (11th Gen) Intel® Celeron N4505, Dual Core	max TDP 10W 14nm Gemini Lake Intel® Celeron J4005, Dual Core
MEMORY	2 x 8GB DDR4 2933 MHz (max 16GB)	2 x 4GB DDR4 2400 MHz (max 8GB)
VIDEO OUTPUT	HDMI 2.0b + DisplayPort 1.4a + D-sub/VGA (no hot plug) Supports triple displays Supports 4K Ultra HD	HDMI 1.4b + DisplayPort 1.2 + D-sub/VGA (no hot plug) Supports triple displays Supports 4K Ultra HD
AUDIO	Realtek AL662/ALC897/ALC888S, 2 channel HD audio	Realtek ALC269, 2 channel HD audio
ETHERNET	Intel i211 x 1 10/100/1000 MB/s operation Supports Wake on LAN function	Intel i211 x 1 10/100/1000 MB/s operation Supports Wake on LAN function
SATA ONBOARD	SATA 6G x 1	SATA 6G x 1
FRONT PANEL	Power button with LED, HDD LED, MIC-in, Headphone out, SD Card Reader, USB 3.2 Gen 2 x 2	Power button with LED, HDD LED, MIC-in, Headphone out, SD Card Reader, USB 3.2 Gen 1 x 2
BACK PANEL	HDMI 2.0b, DisplayPort 1.4a, D-sub/VGA USB 3.2 Gen 1 x 2, USB 2.0 x 2 Gigabit LAN (Intel i211) x 1 RS232 + RS232/RS422/RS485 WLAN antenna x 2 (optional) Clear CMOS header Kensington Lock x 2	HDMI 1.4b, DisplayPort 1.2, D-sub/VGA USB 2.0 x 4 Gigabit LAN (Intel i211) x 1 RS232 + RS232/RS422/RS485 WLAN antenna x 2 (1 x optional) Clear CMOS header Kensington Lock x 2
DRIVE BAYS	(1) 2.5" HDD/SSD bay	(1) 2.5" HDD/SSD bay
OPTIONAL ACCESSORIES	Vertical Stand (PS02) DIN-rail mounting kit (DIR01) LTE kit for 2.5" drive bay (WWN03) WLAN kit (WLN-M) Cable for external power button (CXP01) 2U rack mount front plate for two slim PCs (PRM01)	Vertical Stand (PS02) DIN-rail mounting kit (DIR01) LTE kit for M.2 2230 slot (WWN01) Cable for external power button (CXP01) 2U rack mount front plate for two slim PCs (PRM01)
EXPANSION SLOT	M.2 2280 M slot, supports PCI-E X1 and SATA M.2 2230 E slot, supports optional WLAN	M.2 2280 M slot, supports PCI-E X1 and SATA M.2 2230 E slot, Supports optional WLAN
OS SUPPORT	Windows 10, Linux 64 bit	Windows 10, Linux 64 bit

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