Shuttle®

Fanless 1-litre PC suitable for 24/7 operation

The Shuttle XPC slim Barebone DL10J is the successor to Shuttle's DX30. This fanless Slim PC barebone with an energy-efficient Intel Celeron J4005 "Gemini Lake" processor is suitable for building particularly slim PC systems with drives and operating system as well as client/server setups for pure network-based applications. The optional XPC accessory WWN01 allows for an LTE module to be installed for mobile internet access. The integrated graphics is based on Intel's powerful Intel UHD Graphics 600 (9th gen) that supports hardware acceleration for 4K video encoding/decoding with H.265 and VP9 thanks to the DisplayPort. Combined with an SSD or M.2 drive, the DL10J works virtually noiseless.

Shuttle XPC slim Barebone

DL10J

Feature Highlights

Chassis	• Black 1.35-litre chassis • Dimensions (LWH): 19 x 16.5 x 4.3 cm • Hole for the Kensington Lock • Including VESA75/100 mounting kit • Operating temperature max. 40 °C • Approved for 24/7 non-stop operation
Operating System	• Without operating system • Compatible with Windows 10 (64-bit) and Linux (64-bit)
CPU	• Intel® Celeron® J4005 "Gemini Lake" 2.0~2.7 GHz Dual Core 10 W SoC • Noiseless, fanless cooling system
Graphics	• Integrated Intel UHD Graphics 600 (Gen 9)
Memory	• 2x SO-DIMM socket (260-pin) supports max. 8 GB DDR4-2400 (1x 8 GB or 2x 4 GB)
Storage	• Supports one 2.5" SATA storage drive, hard disk or SSD, max. 12.5 mm thick • M.2-2280 slot (PCIe and SATA 6G) • With SD card reader (SD/SDHC/SDXC)
Connectors and WLAN	• HDMI 1.4b, DisplayPort 1.2, D-Sub/VGA (*) • 2x USB 3.0, 4x USB 2.0, 2x COM (serial) • 2x Audio (mic, headphones) • Intel Gigabit-LAN, WLAN 802.11n (1T1R) • Connector for external power button
Power Supply	• External 40 W fanless power adapter
Optional Accessories	• Vertical stand (**PS02**), 2U plate (**PRM01**) • Cable for external power button (**CXP01**) • LTE kit without/with LTE module (**WWN01/11**) • DIN-Rail mounting kit (**DIR01**)
Applications	• Office, Home Media, Digital Signage

Optional Accessory: Vertical Stand PS02

Images for illustration purposes only. The WLAN antenna and VESA mounting kit are included in the scope of delivery. (*) the D-Sub/VGA port does not support Hotplug
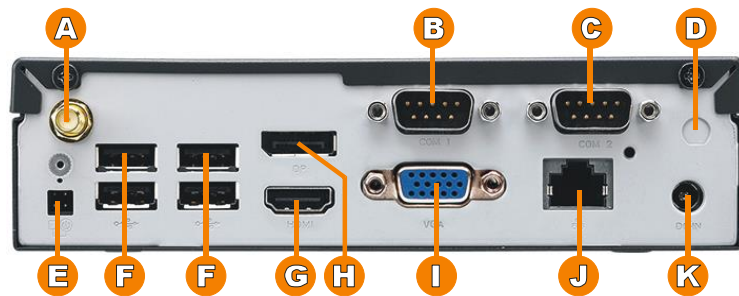
intel CELERON inside™

nonstop 24/7

intel LAN

Dual COM

40 0 °C

Triple Monitor Support

4K 2160p ULTRA HD 3840 x 2160

Optional: **Internal LTE module**

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Shuttle XPC slim Barebone DL10J – Front and Back Panel

Front View

1 Microphone input
2 Headphones output
3 Power LED
4 Hard disk / SSD LED
5 Power Button
6 SD Card Reader
7 2x USB 3.0

Rear View

A Connector for the included WLAN antenna
B COM 1 port (supports RS232/RS422/RS485)
C COM 2 port (supports RS232)
D Perforation for antenna
E Connector for external power button, Clear CMOS and 5 V DC voltage (four pins, 2.54 mm pitch)
F 4x USB 2.0
G HDMI 1.4b video output
H DisplayPort (DP 1.2) video output
I D-Sub/VGA video output
J RJ45 Gigabit LAN port
K DC power input
L 2x hole for Kensington Lock
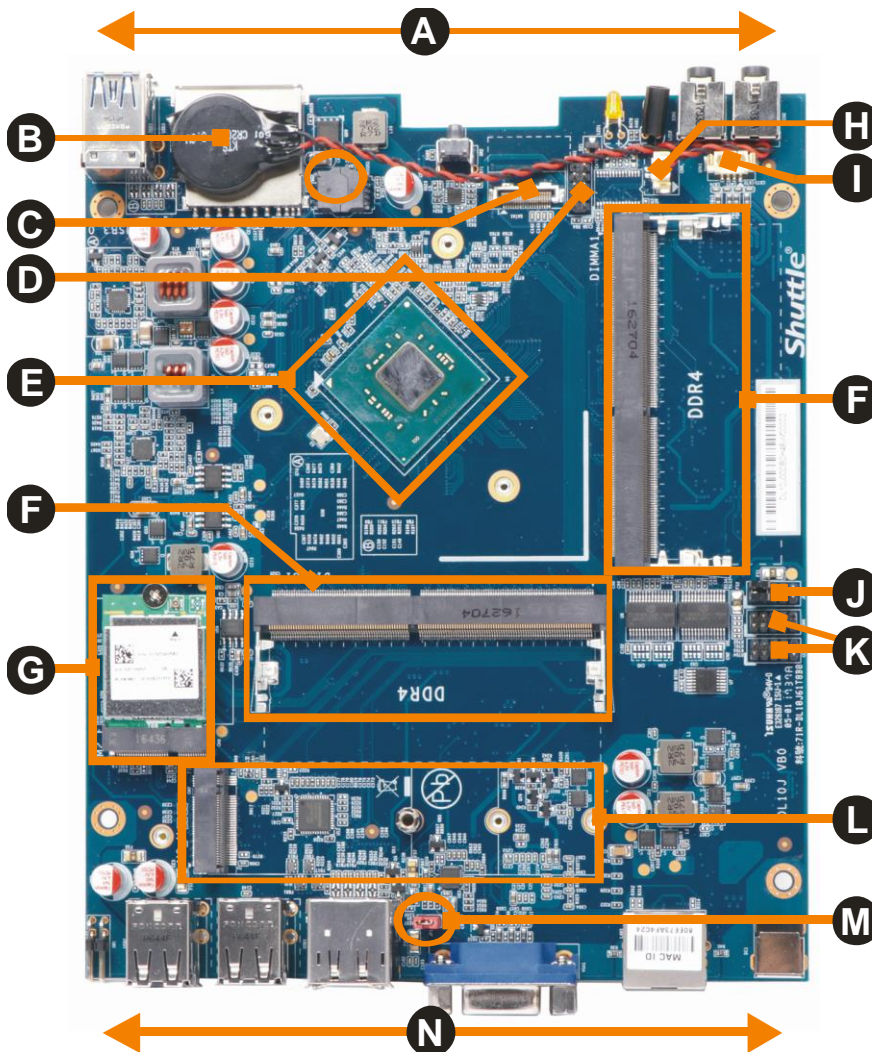M VESA mount (two parts)

Right Side

Left Side

COM port Pin 9 Configuration

Pin 9 is a multi-functional signal. Based on jumper JP2 configuration on the mainboard, it can be configured as Ring Indicator (RI) or external power supply with either 5 V or 12 V voltage level (each COM port is configurable separately).

Shuttle XPC slim Barebone DL10J – Mainboard

A	Front Panel		**H**	Connector for the CMOS battery
B	CMOS battery		**I**	Onboard speakers connector
C	SATA 3.0 (6 Gbps) connector		**J**	COM1/COM2 voltage setting
D	Debug header		**K**	COM1/COM2 onboard connectors
E	Intel Celeron J4005 processor		**L**	M.2-2280 slot for SSD cards
F	2x SO-DIMM socket for DDR4 memory		**M**	Always-On Jumper (JP5)
G	M.2-2230 slot with WLAN module		**N**	Back Panel

Shuttle XPC slim Barebone DL10J – Required Components

The following components need to be added to make it a fully-configured Mini PC:

Processor
(built-in)

WLAN Antenna
(included in delivery)

**2.5" SATA hard disk
or Solid State Disk (SSD)**
(max. height: 12.5 mm)

Up to two memory modules
DDR4-2400 SO-DIMM, 260-pins
Total capacity: max. 8 GB

SSD card in M.2 form factor
- Length: 42, 60 or 80 mm
- Interface: PCIe X4 or SATA

Optional Accessories:

Stand for vertical operation (PS02)

Adapter cable for external power button (CXP01)

DIN-Rail mounting kit (DIR01)

2U rack mount front plate for two Shuttle XPC slim (PRM01)

Adapter for LTE module and SIM card incl. 2 antennas & cables [2]
WWN01: without LTE module
WWN11: with LTE module

Shuttle XPC slim Barebone DL10J – Product Features

1.3 L

190 mm

43 mm

165 mm

Slim, stylish and robust chassis

The Shuttle XPC slim Barebone DL10J 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.

Fanless, quiet and 24/7 approved

The Shuttle XPC slim Barebone DL10J 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.

Conditions for permanent use:
- Free circulation of air amongst the PC must be guaranteed
- Ventilation holes must be clear
- If a hard disk is installed, this must also be approved for permanent operation by its manufacturer.

Easy assembly

With pre-installed SATA cable and no daughterboards the interior of the Shuttle XPC slim Barebone DL10J is very tidy and it won't take long to set it up.
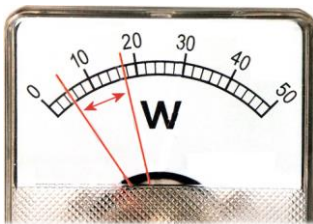
Highly energy-saving

The Shuttle XPC slim Barebone DL10J barely consumes, depending on system load, about 4.6~17.6 Watt. Running the device for 5 days a week and eight hours a day, the annual consumption would amount to approx. 9.6~36.6 kWh which would mean just 2.4~9.2 Euros on the power bill (25 Euro ct/kWh).
(Based on a configuration with 2x 4 GB of memory, 120 GB 2.5" SSD and Windows 10 Build 1607 64-bit.)

Celeron® J4005 – energy efficient Dual Core CPU

The Shuttle XPC slim Barebone DL10J is equipped with an Intel® Celeron® Dual-Core Processor J4005 which is a power-efficient System-on-a-Chip (SoC) from the Gemini Lake family with a clock speed of 2.0 to 2.7 GHz (Burst). It integrates a powerful 9th Gen Intel® UHD graphics engine which brings support for 10-bit video codecs and integrated Triple-Display support. Regardless of these features, it consumes a mere of 10 Watt TDP.

M.2-2280-Slot for SSD cards

The M.2-2280 slot supports M.2 NVMe drives with PCIe interface. The older SATA standard is supported, too.

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.

Triple Display with HDMI 1.4b, DisplayPort and VGA

The Shuttle XPC slim Barebone DL10J offers triple display support which helps improve on productivity by allowing for multiple windows to be spread across three monitors while working with them simultaneously. With HDMI 1.4b and DisplayPort it features two digital video outputs which support Ultra HD resolution and 7.1 channel audio at the same time. With a D-Sub/VGA output the analog standard is present, too (no Hot Plug support).
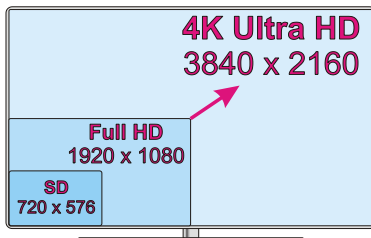
Supports 4K Ultra HD

The Shuttle XPC slim Barebone DL10J supports two displays running at 4K (3840 x 2160 / 2160p) high resolution when connected to its HDMI 1.4b and DisplayPort video outputs. Being the successor to the Full HD standard, Ultra HD delivers a four times higher resolution with a wider colour space and colour depth.

Note: DisplayPort 1.2 supports 2160p at 60 Hz, HDMI 1.4b at 30 Hz.

Wireless LAN with external antenna

The Shuttle XPC slim Barebone DL10J comes with a built-in Wireless-LAN card in M.2-2230 format and one external antenna for better signal reception. The antenna should be aligned vertically or horizontally for best possible range.

Optional WAN connectivity via 3G/LTE

The present WLAN function can be swapped for a 3G/LTE solution by using the optional "Shuttle Accessory WWN01" kit. This includes an adapter card and two antennas with appropriate cables. In additon, an M.2-2242 3G/LTE card and a SIM card is required. [2]

Two serial RS-232 ports (COM)

The Shuttle XPC slim Barebone DL10J 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.

SD card reader

The built-in SD card reader at the front makes it easy to transfer files to your Shuttle XPC slim Barebone DL10J with ease.

VESA mount

The supplied 75/100mm VESA mount allows for installation on to walls or monitors. The chassis also bears numerous threaded holes (M3) enabling it to be fitted almost anywhere.

Kensington Lock

This is a small, metal-reinforced hole as part of an anti-theft system. The Shuttle XPC slim Barebone DL10J provides an appropriate hole on both sides of its chassis. The lock and cable are not included.

External power button by separate remote line

If, because of space constraints (e.g. in case of a 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 on the backpanel of the Shuttle XPC slim Barebone DL10J (pitch 2.54 mm). Furthermore, this connector provides a Clear CMOS function and +5V DC voltage supply for external devices.

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

Power on after Power fail

- Back Panel -

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 the Shuttle XPC slim Barebone DL10J also comes with a hardware-based solution. By removing Jumper JP1 (see image) the system will start unconditionally once power is applied.
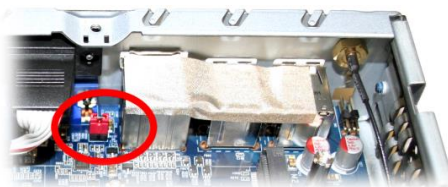
Compact 19V power adapter (12V also supported)

The external fanless 40 W power adapter is virtually noiseless and can easily be hidden behind the desk thanks to its dimunitive size. The power adapter has 19V (max. 2.1A), but the DL10J can also be operated with a 12V (max. 3.33A) power source.

Shuttle XPC slim Barebone DL10J - Specifications

Fanless and silent	Completely fanless, virtualy noiseless Passive cooling through convective heat transfer Perfect to be used in noise-sensitive environments Fanless means less dust and thus virtually no maintenance required
Energy Efficient	Power consumption in idle mode: 4.6 W Power consumption under full load: 11.3 W / 17.6 W (CPU / CPU+graphics) (measured with 2x 4 GB DDR4-2400 SO-DIMMs and 120 GB 2.5" SSD under Windows 10 64-bit)
Chassis	Slim PC with black chassis made of steel Dimensions: 190 x 165 x 43 mm (LWH) = 1.35-litre Weight: 1.3 kg net and 2.1 kg gross Two holes for Kensington Lock and numerous threaded holes (M3) at both sides of the chassis
Operation Position	1) Horizontal 2) Vertical with mounted feet. These feet can be purchased as optional accessory PS02. 3) Vertical (e.g. VESA-mounted behind an appropriate monitor) In vertical position, the front USB ports should point upward. Ventilation holes must not be blocked to ensure sufficient cooling.
Operating System	This system comes without operating system. It is compatible with: - Windows 10 (64-bit) - Linux (64-bit) Note: Windows 7, 8 and 8.1 are not supported
Processor	Intel® Celeron® Processor J4005, Dual Core CPU clock frequency: 2.0 GHz, max. Turbo frequency: 2.7 GHz Gemini Lake Core, Goldmont Plus microarchitecture 14 nm structure, FCBGA1090 package (soldered) CPU cores / Threads: 2 / 2 L2 Cache: 4 MB Thermal Design Power (TDP): 10 W Supports x86-64, AES-NI, VT-x (EPT), VT-d System-on-Chip processor (SoC) with integrated graphics processor, no chipset required

Integrated Graphics	The Graphics Processing Unit (GPU) is integrated in the processor Intel® UHD Graphics 600 (9th Gen), graphics frequency: 250~700 MHz Supports DirectX 12, OpenGL 4.3, OpenCL 1.2, OpenGL ES 3.0, Intel Quick Sync Video, Intel Clear Video (HD) Execution Units (EU): 12 Triple Display Support via three video outputs: - HDMI 1.4b: max. 4096 x 2160 @ 30 Hz or 1920 x 1200 @ 60 Hz - DisplayPort 1.2: max. 4096 x 2160 @ 60 Hz - D-Sub (VGA): max. 1920 x 1200 resolution @ 60 Hz Supports two digital displays and one analog display simultaneously. The D-Sub/VGA connector does not support the Hot Plug feature.
UEFI Firmware	16 MB Flash ROM with AMI's Aptio UEFI BIOS Firmware Based on the Unified Extensible Firmware Interface (UEFI) [1] Supports Power fail resume / AC power on state / always on / always off [3] Supports Wake-on-LAN (WOL) from S3, S3, S5 ACPI states Supports boot up from external flash memory cards With embedded Firmware TPM v2.0 (fTPM)
Memory	2x SO-DIMM slot with 260 pins Supports DDR4-2400 (PC4-19200U) SDRAM at 1.2 V Supports Dual Channel mode Supports max. 8 GB per DIMM Maximum total size: 8 GB (either 1x 8 GB or 2x 4 GB)
2.5" Bay	Supports one drive in 6.35 cm / 2.5" format (hard disk or SSD) Serial ATA III Interface with up to 600 MB/s transfer speed Max. height 12.5 mm Pre-installed SATA cable (data / power) Supports Unified Extensible Firmware Interface (UEFI)
M.2 Slot for SSD card	M.2 2280 BM slot Interfaces: PCI-Express Gen. 2.0 X2 and SATA v3.0 (max. 6 Gbit/s) Supports M.2 cards with a width of 22 mm and a length of 42, 60 or 80 mm (type 2242, 2260, 2280) Supports SATA SSDs (BM-Key) or NVMe PCIe SSDs (M-Key)
Integrated Audio	Realtek ALC269 Audio Codec Two analog audio connectors (3.5 mm): 1) Line out (headphones) 2) Microphone input Onboard connector for 2x 2 Watt speakers Digital multi-channel audio output: via HDMI and DisplayPort
Card Reader	Integrated card reader supports standard SD, SDHC and SDXC memory flash cards Supports boot from SD card Controller: Realtek RTS5170 Media Processor

Wired Network	RJ45 connector supports Gigabit LAN at 10/100/1000 Mbit/s Intel i211 Ethernet Controller with MAC, PHY and PCIe interface Supports Wake-on-LAN
Wireless Network	M.2-2230 WLAN card with Realtek RTL8188EE Controller Supports IEEE 802.11b/g/n Max. 150Mbps up-/downstream (1T1R) at 2.4 GHz One external antenna supplied
LEDs and Buttons	Power button Power LED (blue) HDD LED (yellow)
Front Panel Connectors	2x USB 3.0 SD card reader Audio line-out (headphones) Mic-in
Back Panel Connectors	HDMI 1.4b digital video and audio output DisplayPort 1.2 digital video and audio output D-Sub/ VGA analog video output (15-pin) - no hot plug 4x USB 2.0 Gigabit network (LAN, RJ45) 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) [6] DC input for the external power adapter 4-pin connector (2.54 mm pitch) supports - external power on button - Clear CMOS function - +5V DC voltage for external components External WLAN antenna (perforation for second antenna available)
Other Onboard Connectors	Connector SPK1 (4-pin) supports two 2 W speakers Connectors COM1/COM2 for serial ports (occupied) Connector CN9 for supplied CMOS battery (type CR2032) Jumper JP2 for power-on-after-power-fail (hardware solution) [3]
Power Supply	External 40 W AC/DC power adapter (fanless) AC Input: 100~240 V AC, 50~60 Hz DC Output: 19 V / 2.1 A Automatic voltage adjust Dimensions: 89.5 x 37 x 26.5 mm (LWH)
DC Input connector	DC Connector: 5.5 /2.5 mm (outer/inner diameter) The DC-input of the computer supports an external power source with either 12 V ±5% or 19 V ±5%.

Supplied Accessories	Multi-language user guide (EN, DE, FR, ES, JP, KR, SC, TC) VESA mount for 75 / 100 mm standard (two metal brackets) Four thumbscrews M3 x 5 mm (screws together VESA mount and PC) Four screws M4 x 10 mm (to affix VESA mount on the PC) Four screws M3 x 4 mm (to mount a 2.5" storage into the bay) Driver DVD (Windows 64-bit) External 40 W power adapter with power cord
Optional Accessories	- **PS02:** optional stand for vertical operation - **CXP01:** adapter cable for external power button - **PRM01:** 2U rackmount front plate for two Shuttle XPC slim PCs - **WWN01:** LTE kit with adapter card, 2 antennas and antenna cables. Supports one M.2 LTE module and one nano SIM card [2] - **WWN11:** LTE kit with adapter card, 2 antennas, antenna cables and M.2 LTE module (Huawei ME906s-158 for EU). The required nano SIM card is not included. - **DIR01:** optional DIN-Rail mounting kit
24/7 Nonstop Operation	This device is approved for 24/7 permanent operation. Requirements: - Free air circulation around the PC must be guaranteed. - Ventilation holes must be kept clear. - Any installed disk must also be approved for permanent operation by its manufacturer
Environmental spec.	Operating temperature range: 0 ~ 40 °C Relative humidity range: 10 ~ 90 % (non-condensing)
Certification and Compliance	EMI: FCC, CE, BSMI, RCM, VCCI, RED 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), (4) 1999/5/EC related to Radio and Telecommunications Terminal Equipment (R&TTE)

[1] UEFI-Firmware (versus BIOS)
Just as with many modern PCs, the Shuttle XPC slim Barebone DL10J does away completely with a BIOS, but uses a pure UEFI firmware instead. The terms UEFI firmware and BIOS are widely used synonymously, but hardware initialising is now performed by the UEFI. Users might not even notice, but the operating system must be installed and executed in UEFI mode. UEFI creates a GUID Partition Table (GPT) on the system partition instead of a Master Boot Record (MBR). A PC running pure UEFI firmware alone must have a 64-bit operating system installed.

[2] Optional LTE support
Shuttle provides the optional "Shuttle Accessory WWN01" which consists of an adapter card, two antennas plus 20 cm antenna cables. The adapter card replaces the standard WLAN card in the M.2-2230 slot and works as a riser card for a 3G/LTE card and a SIM card. 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 WWN01.

[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] HDMI output supports DVI-D with optional adapter

[5] 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.

[6] 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.

Product Comparison

	DX30	DL10J
Chassis	Dimensions: 190 x 165 x 43 mm (LWH), 1.35-litre metal chassis	
Processor	**Intel Celeron J3355 "Apollo Lake"** **Dual Core, 2.0~2.5 GHz, TDP = 10 W**	**Intel Celeron J4005 "Gemini Lake"** **Dual Core, 2.0~2.7 GHz, TDP = 10 W**
OS Support	Operation system: supports Windows 10 (64-bit) and Linux (64-bit)	
Graphics	**Intel HD Graphics 500** (9th gen) 250~700 MHz	**Intel UHD Graphics 600** (9th gen) 250~700 MHz
UHD/4K Support	HDMI 1.4b supports 2160p/30 DisplayPort 1.2 supports 2160/60	HDMI 1.4b supports 2160p/30 DisplayPort 1.2 supports 2160/60
Memory Support	**2x SO-DIMM slot (204-pin)** support max. 8 GB **DDR3L-1600/1866**	**2x SO-DIMM slot (260-pin)** support max. 8 GB **DDR4-2400**
Audio	**Realtek ALC662**	**Realtek ALC269** **with onboard connector for speakers**
LAN	Intel i211 Gigabit LAN controller	
WLAN	Realtek RTL8188EE, 1T1R 2.4 GHz, IEEE 802.11n, with external antenna	
Drive Bays	2.5" bay supports one Serial-ATA hard disk or SSD drive (max. 12.5 mm)	
M.2 Slot	M.2-2280 slot supports M.2 SSD card with SATA or NVMe PCIe X4 interface	
Front Panel	On/Off button, Power LED, HDD LED 2x USB 3.0, 2x Audio, SD card reader	
Back Panel	HDMI 1.4b, DisplayPort 1.2, **optional VGA** 4x USB 2.0, Intel Gigabit LAN, **PS/2 combo** 2x COM RS232 (1x RS422/485)	HDMI 1.4b, DisplayPort 1.2, **D-Sub/VGA** 4x USB 2.0, Intel Gigabit LAN 2x COM RS232 (1x RS422/485)
VESA	VESA mount included (75/100 mm) with screws	
Optional Accessories	**PS02:** stand for vertical operation **CXP01:** adapter cable for ext. power button **PRM01:** 2U rackmount front plate **DIR01:** DIN-Rail mounting kit	**PS02:** stand for vertical operation **CXP01:** adapter cable for ext. power button **PRM01:** 2U rackmount front plate **WWN01:** adapter kit for LTE/SIM cards **WWN11:** adapter kit with LTE/SIM card **DIR01:** DIN-Rail mounting kit
TPM	Firmware TPM v2.0	
Fanless / 24/7	Completely fanless, suitable for 24/7 nonstop operation	
Environmental Specification	Operation temperature range: 0 ~ 40 °C	
Power Adapt.	40 W / 19 V power adapter (also supports 12V power source)	
Front View		
Rear View		