

DS10U Series

SLIM PC



PROCESSOR	Intel® Whiskey Lake-U Celeron® 4205U 15W CPU i3-8145U/i5-8265U/i7-8565U (optional)	
MEMORY	2 x 260 pin DDR4 2133/2400 MHz SODIMM slots, Supports dual channel up to 32GB (16GB x 2)	
VIDEO GRAPHICS	Intel Ultra HD 610/620 graphics	
VIDEO OUTPUT	HDMI 2.0a + DisplayPort + VGA, Supports triple independent displays	
AUDIO	Realtek ALC662, 2 channel HD audio	
ETHERNET	Intel i211 and i219LM 1000 MB/s operation	Realtek RTL 8821CE 802.11 a/b/g/n/ac, Supports Bluetooth 4.2 Supports Wake on LAN function
STORAGE INTERFACE	SATA III 6 GB/s	
ONBOARD CONNECTORS	(1) External 4 pin header (1) Auto power on jumper (1) USB 2.0 header	(1) RS232 voltage switch (2) 2.5 inch SATA connector
FRONT PANEL	(1) Power Button (1) Power LED (1) HDD LED (1) MIC in	(4) USB 2.0 (2) USB 3.1 Gen 2 (Celeron 4205U is Gen 1) (1) SD Card Reader (1) Headphone out
BACK PANEL	(1) HDMI (1) DisplayPort (1) VGA (2) RJ45 Gigabit LAN (2) USB 3.1 Gen 2 (Celeron 4205U is Gen 1)	(1) External 4 pin header (clear CMOS/power switch/5V) (2) Wireless Antenna fixture (1) DC-in (1) Kensington Lock (1) RS232/RS422/RS485
DRIVE BAYS	(1) 2.5" HDD/SSD bay	
DIMENSIONS	7.9(L) x 6.5(W) x 1.5(H) inches	
POWER	Input: 100 - 240V AC Output: 19V/3.42A or 12V/5.42A DC	65W 19V power supply
ACCESSORIES	Quick Guide Screw package 65W power adapter Power cord Thermal grease	VESA mount VESA mount screws Vertical Stand Driver DVD External antenna
EXPANSION SLOT	(1) M.2 2280 Type M key socket	(1) M.2 2230 Type E key socket
OS SUPPORT	Windows 10, Linux	

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CHASSIS	<p>Black slim type metal chassis</p> <p>Bays for memory, 2.5" drive, and M.2 card easily accessed by removing two cover plates</p> <p>Kensington lock slots on the sides as part of anti-theft system</p> <p>Dimensions: 7.9 (L) x 6.5 (W) x 1.6 (H) inches</p> <p>Weight: 3.3 LBS (net) / 4.9 LBS (gross)</p>
MAINBOARD AND CHIPSET	<p>Shuttle mainboard DS10</p> <p>Supports hardware monitoring and watch dog functionality</p> <p>Solid capacitors for sensitive areas provide excellent heat resistance for enhanced system durability</p>
BIOS	<p>AMI BIOS, SPI Interface, 8 MB EEPROM</p> <p>Supports Firmware-TPM (fTPM) v2.0</p> <p>Supports boot up from M.2 SSD cards, USB devices, and SD Card Reader</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p> <p>Supports resume after power failure [6]*</p> <p>Supports Wake-on-LAN (WOL), Power on by RTC alarm</p>
POWER SUPPLY	<p>External 65W power adapter (fanless), DC-input supports 12V±5% or 19V±5% power source</p> <p>AC input voltage: 100 - 240V, 50 - 60 Hz, max. 1.6A</p> <p>Output: 19V DC 3.42A, max 65W</p> <p>DC cable length: 67 inches, 5.5/2.5 mm (outer/inner diameter)</p> <p>AC cable length: 67 inches</p>
OPERATING SYSTEM	<p>The system comes without an operating system installed.</p> <p>Compatibility: Windows 10, Linux 64bit</p>
PROCESSOR SUPPORT	<p>Intel® Celeron® 4205U processor (ULV), Core i3/i5/i7 options available (i3-8145U/i5-8265U/i7-8565U)</p> <p>System-on-a-chip architecture (SoC), Integrated memory and graphics controller (no chipset required)</p> <p>Whiskey Lake-U (8th Generation Intel® Core™) directly soldered onto the mainboard</p> <p>Max supported processor power consumption (TDP): 15W</p> <p>14nm++ process technology, up to 2 cores and 2 threads</p> <p>L1/L2/L3 cache: 128KB/512KB/2048 KB, Clock rate 1.8 GHz</p> <p>Supports 64-bit, VT-x (EPT), VT-d, Enhanced SpeedStep, NX bit, AES-NI, SSE 4.1/4.2</p> <p>Please refer to the support list for more detailed processor information at global.shuttle.com</p>
SYSTEM COOLING	<p>Passive cooling, fanless and dust free</p> <p>Perfect for noise sensitive environments</p>
MEMORY SUPPORT	<p>2 x 260 pin SODIMM slots</p> <p>Supports DDR4 2133 MHz memory (PC4-17000) SDRAM at 1.2V</p> <p>Supports Dual Channel mode</p> <p>Supports a max. of 16GB per DIMM, up to 32GB total</p> <p>Supports two unbuffered DIMM modules (no ECC or registered)</p>
2.5" DRIVE BAY	<p>1 x 2.5" drive bay supports one SATA hard disk or SSD drive (2.5" format), max height 12.5 mm</p> <p>Supports Serial-ATA III, 6 GB/s (600MB/s) bandwidth</p> <p>Supports Unified Extensible Firmware Interface (UEFI)</p> <p>No serial ATA cable is required, please refer to note [2]*</p>
M.2 SLOT FOR SSD	<p>M.2 2280 BM slot provides the following interfaces:</p> <ul style="list-style-type: none"> -PCI-Express Gen 2.0 X4 with up to 2 GB/s -SATA v3.0 (max. 6GB/s) <p>Supports M.2 cards with a width of 22 mm and length of 42/60/80 mm (type 2242, 2260, 2280)</p> <p>Supports M.2 SSDs (with BM key) and M.2 PCI-E NVMe SSDs (with M key)</p>
WIRELESS NETWORK	<p>Built-in M.2 2230 A/E WLAN card with connectors for two external antennas</p> <p>WLAN Controller Realtek RTL8821AE</p> <p>Supports Wi-Fi IEEE 802.11 b/g/n/ac, 2.4/5 GHz band, 1T1R</p> <p>Supports 20/40/80 MHz channel bandwidth</p> <p>Security: Supports WPA(-PSK), WPA2(-PSK), WEP 64/128 bit, IEEE 802.11x, IEEE 802.11i</p> <p>Supports Bluetooth 4.0 for 2.4 GHz band</p>

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INTEGRATED GRAPHICS	<p>Intel UHD Graphics 610 GPU clock frequency: 300 - 900 MHz, Execution Units (EUs): 12 Supports DirectX 12, full H264, H265 8/10 bit, VP 8/9, VC-1, AVC hardware decoding Supports Quick Sync Video and Clear Video HD technology</p> <p>Supports up to three independent displays: 1) DisplayPort 1.2 supports Ultra HD (60 Hz) 2) HDMI 2.0a supports Ultra HD (60 Hz) 3) VGA supports analog displays</p>	
MULTI-CHANNEL AUDIO	<p>Realtek ALC 662 High Definition Audio, Digital multi-channel audio output via HDMI and DisplayPort Two analog audio connectors (3.5 mm) on the back panel: 1) 2 channel line out (headphones) 2) Microphone input</p>	
GIGABIT LAN CONTROLLER	<p>Dual network with two RJ45 ports, used network chips: Intel i211 Ethernet Controller with MAC, PHY, and PCIe interface Intel i219LM PHY connected to the MAC of the processor Supports 10/100/1000 MB/s operation Supports Wake-on-LAN (WOL), Supports Teaming mode [3]* Supports network boot by Preboot eXecution environment (PXE)</p>	
SATA CONNECTORS	<p>The mainboard provides one Serial-ATA III interface, max 6GB/s supported Serial-ATA power connector (onboard)</p>	
CARD READER	<p>Integrated card reader supports SD, SDHC, SDXC (up to v3.01) memory flash cards USH-I interface supports up to 104 MB/s (SDR104) transfer speed Supports boot up from SD card, Realtek RTS52275 chip with PCIe chipset interface</p>	
FRONT PANEL CONNECTORS	<p>Microphone input Headphone output (line-out) 2 x USB 3.1 Gen 1 4 x USB 2.0</p>	<p>Power button Power indicator (Blue LED) Hard disk drive indicator (Yellow LED) SD Card Reader</p>
BACK PANEL CONNECTORS	<p>HDMI 2.0a DisplayPort 1.2 VGA port USB 3.1 Gen 1 x 2 (max 5 GB/s)</p>	<p>Serial COM port (5V/12V, switchable to RS232/RS422/RS485) [1]* DC-input connector for external power adapter 4-pin connector (SW2) for power button, Clear CMOS, 5V DC [4]* RS232 x 2 (1 x RS422/RS485)</p>
ALWAYS-ON-JUMPER	<p>By removing Jumper J9 (refer to quick guide), the system will start once power is applied [6]*</p>	
INCLUDED ACCESSORIES	<p>XPC installation guide Driver DVD Screw pack</p>	<p>VESA mount (75/100mm standard) External 65W power adapter with power cord Stand with screws</p>
OPTIONAL ACCESSORIES	<p>Cable for second COM port (PCP11) Cable for external power button (CXP01) Mounting kit for 35mm DIN-rail (DIR01)</p>	<p>2U rack mount front plate for two slim PCs (PRM01) LTE adapter kit for 2.5" bay w/ two antennas (WWN03) [2]*</p>
ENVIRONMENTAL CRITERIA	<p>Operating temperature: 0 - 40°C [5]*</p>	<p>Humidity: 10 - 90% (non-condensing)</p>
OPERATING POSITION	<p>Vertical: Usual operating position with supplied stand (DisplayPort facing up) VESA mounted: Can be mounted behind monitor with supplied kit Horizontal operation can be used but there are no rubber feet on the device (max operating temperature would be 35°C in that case)</p>	
CERTIFICATIONS	<p>EMI: FCC, CE, BSMI, C-Tick 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) 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/EC relating to eco-design requirements for energy related products (ErP) (4) 2014/53/EU Radio Equipment Directive (RED)</p>

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[1] JUMPER FOR COM PORT CONFIGURATION

Pin 9 of the COM port is a multi-functional signal. Based on the Jumper JP1 configuration on the mainboard, it can be configured as a Ring Indicator (RI) or external power supply with a voltage of either 5V or 12V. Each COM port can be configured separately (the operating mode of COM1 can be set to RS232, RS422, or RS485 in the BIOS). The second COM port (COM2) supports RS232 mode only and is only available as an onboard connector on the mainboard. An appropriate adapter (ie the optional accessory PCP11) is required in order to use this port as a D-sub connector on the back panel (the VGA port cannot be used in this case).

[2] LTE ADAPTER KIT WWN03

If the LTE adapter kit WWN03 is used, the 2.5" bay cannot be used for SATA drives (2.5" HDD/SSD). An SSD card using the M.2 2280 format must be used instead.

[3] TEAMING MODE

The teaming function allows for grouping both available network adapters to work as a single adapter. This mode enables load balancing and failover (the driver download can be found here: <https://downloadcenter.intel.com/download/21642>)

[4] FOUR-PIN HEADER ON BACK PANEL

This header allows for connecting an external power button and also provides 5V DC voltage for external devices and the Clear CMOS function (optional accessory cable CXP01 is needed for external power button).

[5] HIGH AMBIENT TEMPERATURE

For high ambient temperatures over 35°C, SSDs are strongly recommended instead of hard disk drives

[6] 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 DH110 comes with a hardware based solution in these cases. By removing the Jumper JP2 on the mainboard (behind the power button), the system will start unconditionally once power is supplied.

[7] HDMI OUTPUT

The HDMI output supports DVI-D with an optional adapter

[8] 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.

BIOS DOWNLOADS: <http://global.shuttle.com/products/productsDownload?productId=2403>

SUPPORT LIST: <http://global.shuttle.com/products/productsSupportList?productId=2403>

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

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

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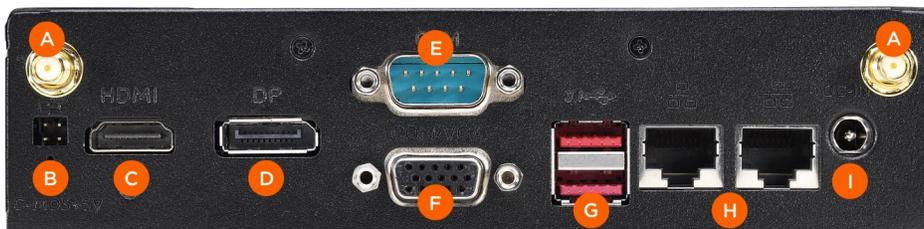
Front View



- | | | | |
|---|----------------|---|----------------|
| 1 | USB 3.1 Gen 2* | 6 | USB 2.0 |
| 2 | USB 2.0 | 7 | SD Card Reader |
| 3 | Power LED | 8 | Microphone in |
| 4 | Hard Disk LED | 9 | Headphone out |
| 5 | Power Button | | |

*DS10U supports USB 3.1 Gen 1 only, DS10U3/U5/U7 supports USB 3.1 Gen 2

Back View



- | | | | |
|---|-----------------------|---|----------------------|
| A | WLAN antenna fixture | F | VGA output* |
| B | Clear CMOS | G | USB 3.1 Gen 2 x 2 |
| C | HDMI 2.0 video output | H | RJ45 Gigabit LAN x 2 |
| D | DisplayPort output | I | DC-in |
| E | RS232/RS422/RS485 | | |

*HDMI and DisplayPort supports 4K resolution, VGA only supports Full HD

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INTEL® 8TH GENERATION PROCESSORS

The DS10U is equipped with an Intel® Celeron® 4205U dual core processor (Core® i3/i5/i7/i9 options available). Support for up to 32GB DDR4 2400/2133 MHz memory and integrated UHD graphics provide better efficiency and graphics performance.



VESA MOUNTABLE

The DS10U series is VESA mount compliant and allows for versatile integration into hardware systems. This space saving capability is well suited for digital signage and kiosk applications with limited space.



IOT READY NETWORKS

The DS10U series features robust network connectivity with built-in dual Intel Gigabit LAN and can support 802.11 AC Wi-Fi + Bluetooth and an optional 4G LTE adapter kit (WWN03)* at the same time.

*If the WWN03 accessory kit is used, it will occupy the 2.5" HDD rack



4K ULTRA HD EXPERIENCE WITH HDMI 2.0

The DS10U features one HDMI 2.0 output to support 4K resolution at a maximum of 60 FPS and transmission of high dynamic range video (HDR) for vivid streaming, higher contrast ratio, and more accurate color from HDR compatible displays and TVs.*

*HDMI and DisplayPort supports 4K resolution, VGA only supports Full HD



FANLESS DESIGN

With a passive thermal cooling system, the fanless design reduces power consumption required by a fan. Use with solid state disks for an operational platform completely free of noise.

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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, DS10U



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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DS77U vs DS10U

SLIM PC



MODEL	DS77U	DS10U
PROCESSOR	Intel® Celeron® 3865U	Intel® Celeron® 4205U
PROCESSOR SUPPORT	LGA 1151v2, max TDP 65W 14nm Kaby Lake-U (7th Gen Core CPU) Intel® Core™ i3/i5/i7 (i3-7100U/i5-7200U/i7-7500U options)	LGA 1151v2, max TDP 65W 14nm++ Whiskey Lake-U (8th Gen Core CPU) Intel® Core™ i3/i5/i7 (i3-8145U/i5-8265U/i7-8565U options)
MEMORY	2 x 16GB DDR4 2133 MHz max	2 x 16GB DDR4 2133/2400 MHz max
VIDEO OUTPUT	HDMI 1.4b x 2 + DisplayPort 1.2*, Supports triple displays, Supports 4K Ultra HD, Intel 610 graphics	HDMI 2.0a + DisplayPort 1.2 + VGA, Supports triple displays, Supports 4K Ultra HD, Intel 610/620 graphics
AUDIO	Realtek AL662, HD audio	Realtek AL662, HD audio
ETHERNET	Intel i211/i219LM x 2 10/100/1000 MB/s operation Supports Wake on LAN function Supports Teaming mode	Intel i211/i219LM x 2 10/100/1000 MB/s operation Supports Wake on LAN function Supports Teaming mode Supports Bluetooth 4.2 (with WLAN module)
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. Gen 1 x 2, USB 2.0 x 2, RS232 x 2	Power button with LED, HDD LED, MIC-in, Headphone out, SD Card Reader, USB 3.1 Gen 1 x 2, USB 3.1 Gen 2 x 2
BACK PANEL	HDMI 1.4b x 2, DisplayPort 1.2* USB 2.0 x 2 Gigabit LAN (Intel i211) x 2 RS232 + RS232/RS422/RS485 WLAN antenna x 2 (optional) Clear CMOS button Kensington Lock x 2	HDMI 2.0a, DisplayPort 1.2, VGA USB 3.1 Gen 2 x 2**, USB 2.0 x 4 Gigabit LAN (Intel i211) x 2 RS232/RS422/RS485 WLAN antenna x 2 (optional) Clear CMOS button Kensington Lock x 2
DRIVE BAYS	(1) 2.5" HDD/SSD bay	(1) 2.5" HDD/SSD bay
OPTIONAL ACCESSORIES	Vertical Stand (PS02) VGA adapter (PVG01) Cable for external power button (CXP01) 2U rack mount front plate for two slim PCs (PRM01)	Vertical Stand (PS02) COM port adapter (PCP11) LTE Adapter Kit (WWN03) Cable for external power button (CXP01) 2U rack mount front plate for two slim PCs (PRM01)
EXPANSION SLOT	M.2 2280 BM slot M.2 2230 AE slot, Supports optional WLAN	M.2 2280 M slot M.2 2230 E slot, Supports optional WLAN
OS SUPPORT	Windows 10, Linux 64 bit	Windows 10, Linux 64 bit

*The DisplayPort for DS77U does not support audio output

**DS10U supports USB 3.1 Gen 1 only, DS10U3/U5/U7 supports USB 3.1 Gen 2

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