# BAREBONE
# XPC slim
# DB860

## ROBUST 1.3-LITRE PC SUPPORTS INTEL CORE ULTRA 200 PROCESSORS AND UP TO FOUR DISPLAYS

This robust 1.3-litre Barebone PC houses the performance of Intel's Core Ultra 200 series processors (Socket LGA1851 "Arrow Lake-S") with Integrated Neural Processing Unit (NPU) for demanding AI workloads. The DB860 supports up to 8K display resolution via HDMI 2.1 plus one HDMI 2.0 and two DisplayPorts (one as USB-C), delivering a stunning visual experience for digital signage and entertainment. Beside this it also offers Dual Intel LAN, eight additional USB 3.2 ports and two COM ports. The slim metal chassis comes with a VESA mount included, provides versatile connectivity and reliable operation in environments with ambient temperatures of up to 50 °C. This platform is targeted at professional applications such as AI tasks, Digital Signage, POS, POI, gambling machines, office, healthcare and industry.







Max. 96 GB DDR5 · Supports 4 DISPLAYS · HDMI 2.1 8K SUPPORT · USB-C with DP and USB4 · NVMe SSD SUPPORT · 2.5" HDD/SSD SUPPORT · DUAL LAN (2.5G + 1.0G) · DUAL COM · VESA MOUNT INCLUDED · WLAN / LTE OPTIONAL · Max. 50 °C · 24/7 SUPPORT

### SLIM DESIGN

■ Slim 1.35-litre metal chassis, black ■ Dimensions: 190 x 165 x 43 mm (LWH) ■ Including VESA mount (75/100 mm) ■ Supports 24/7 Nonstop Operation ■ Operating temperature: 0~50 °C (non-condensing)

### OPERATING SYSTEM

■ An operating system is not included
■ Supports Windows 11 and Linux (64-bit)

### PROCESSOR SUPPORT

■ Socket LGA1851 supports Intel Core Ultra 200 series 9/7/5 processors (code name "Arrow Lake-S"), max. 65W TDP
■ Advanced heatpipe cooling system with two 70 mm fans

### GRAPHICS

■ Integrated Intel Xe series graphics, 4K/8K support (features depend on processor) ■ Supports four independent UHD displays

### CHIPSET

■ Intel B860 Chipset

### MEMORY SUPPORT

■ 2x 262-pin SO-DIMM slot ■ Supports DDR5-5600
■ max. 2x 48 GB = 96 GB in total

### STORAGE – SATA / M.2

■ 1x 2.5" bay for SATA hard disk or SSD ■ 1x M.2-2280M slot (supports PCIe 5.0 x4 NVMe or SATA) ■ 1x M.2-2230E for optional WLAN module

### CONNECTORS

■ HDMI 2.1 (supports 8K / 60 Hz) ■ HDMI 2.0 (supports 4K / 60 Hz) ■ DisplayPort 1.4a ■ USB-C supports DisplayPort, USB4 and 3A charging) ■ optional VGA ■ 4x USB 3.2 Gen2 (1x Type-C) ■ 4x USB 3.2 Gen1 ■ 2x Intel LAN (1G + 2.5G) ■ 2x COM port (1x RS232/422/485) ■ "Always on" Jumper ■ 2x Audio (line out, mic-input) ■ Connector for external power button

### POWER SUPPLY

■ External 180W/19V power adapter

### OPTIONAL ACCESSORIES

■ WLAN-ax Kit (WLN-M12) ■ Vertical Stand (PS02) ■ VGA Port (PVG01) ■ Rackmount kit (PRM01) ■ Cable for external power button (CXP01) ■ DIN-Rail mounting kit (DIR01) ■ 4G/LTE-kit (WWN03)

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## Shuttle XPC slim PCs with Intel 800 series chipset

| Product | Vol. | PCIe Slots | Chip | HDMI 2.x | DP 1.4a | DP 1.4a/ USB4 | VGA Port | max. Displays | LAN (Intel) | M.2 SSD Gen4/5 | USB 3.2 Gen2/1 | USB 2.0 | COM Port | Pwr Adap. | DC-In | VESA Mount |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DH810S** | 1.35 L | — | H810 | 1 | 2 | — | opt. | 3 | 1G | 1 / 0 | 2+2 | 4 | 1 | 120W | 12V+19V | incl. |
| **DH810** | 1.35 L | — | H810 | 1 | 1 | 1 | opt. | 3 | 1G+2.5G | 1 / 0 | 2+2 | 4 | 2 | 120W | 12V+19V | incl. |
| **DB860** | 1.35 L | — | B860 | 2 | 1 | 1 | opt. | 4 | 1G+2.5G | 0 / 1 | 4+4 | 0 | 2 | 180W | 12V+19V | incl. |
| **XH810** | 3.5L | — | H810 | 2 | 1 | — | opt. | 3 | 1G+2.5G | 2 / 0 | 2+2 | 4 | 3 | 120W | 12V+19V | incl. |
| **XB860G2** | 4.5L | X16+X1 | B860 | 2 | 1 | — | opt. | 4 | 1G+2.5G | 2 / 1 | 2+4 | 2 | 0 | 180W | 19V | incl. |

## PRODUCT FEATURES



Height: 4.3 cm only

### Robust, stylish and particularly small

You should have held it in your own hands to see how small it actually is. At barely a volume of 1.35 litres, its steel chassis gives it the appropriate stability required for professional applications such as digital signage. Despite its dimensions of 19 x 16.5 x 4.3 cm (LWH), the overall system performance is very high thanks to support of Intel Core desktop processors. The interior of the DB860 is very tidy too so that it won't take long to set up. Its sleek and stylish looks let it easily find a place in both home and office environments.



### Low noise thanks to heatpipe cooling system

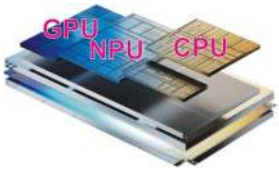
An efficient heatpipe cooling system with two 70 mm fans ensures whisper-quiet operation and system stability.






### Supports extended temperature range and 24/7 operation

The Shuttle XPC slim Barebone DB860 is officially approved for 24/7 permanent operation. Thanks to its efficient cooling, this PC runs highly reliably making it perfectly suitable for digital signage and POI/POS applications – even at ambient temperatures of up to 50 °C (non-condensing).
**Caution:** For high ambient temperatures over 40 °C we strongly recommend to use SSDs.




### Supports Socket LGA1851 Intel® Core™ Ultra processors

"Arrow Lake-S" is the codename for Intel's Core Ultra 200 series Generation of Intel® Core™ Ultra Desktop Processors for socket LGA1851 introduced along with the 800-Series chipsets. These processors feature up to 24 cores (8 Performance-cores and 16 Efficient-cores), up to 4 Intel Xe graphics cores and integrates a Neural Processing Unit (NPU).




### Quad Display support and 8K

The DB860 offers four digital video outputs, all of which support 4K/UHD resolution: 2x HDMI and 2x DisplayPort. The second DisplayPort is designed as a USB4/USB-C connection. The HDMI 2.1 connection even supports 8K/60Hz resolution.
Furthermore, the DB860 supports an optional D-Sub/VGA port. The PC supports a maximum of four displays.



### One M.2-Slot for SSD cards

The M.2-2280 slot supports one M.2 SSD storage card with NVMe PCIe 5.0 X4 or SATA interface. A heat sinks kit with thermal pads for efficient cooling are included.

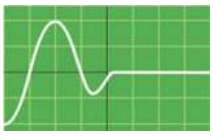
### Dual Intel LAN Network

The Shuttle XPC slim Barebone DB860 supports 2.5G and 1.0G LAN with Intels 226 and 219 network adapters, which are popular for their excellent performance and driver compatibility and are the preferred choice for professional 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.





### 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 the DB860 also comes with a hardware-based solution. By removing Jumper JP1 (see image) the system will start unconditionally once power is applied.



### 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 DB860 (pitch 2.54 mm). Furthermore, this connector provides a Clear CMOS function and +5V DC voltage supply for external devices.

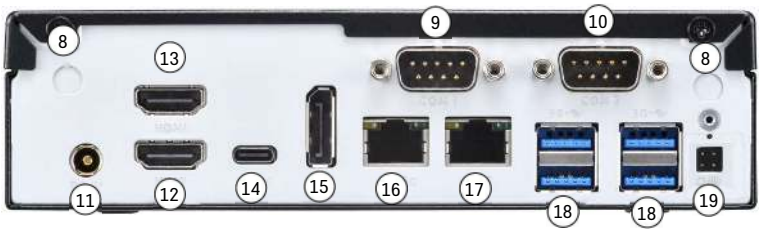


## Front and Back Panel

Front Panel




Back Panel




Side View




VESA Mount



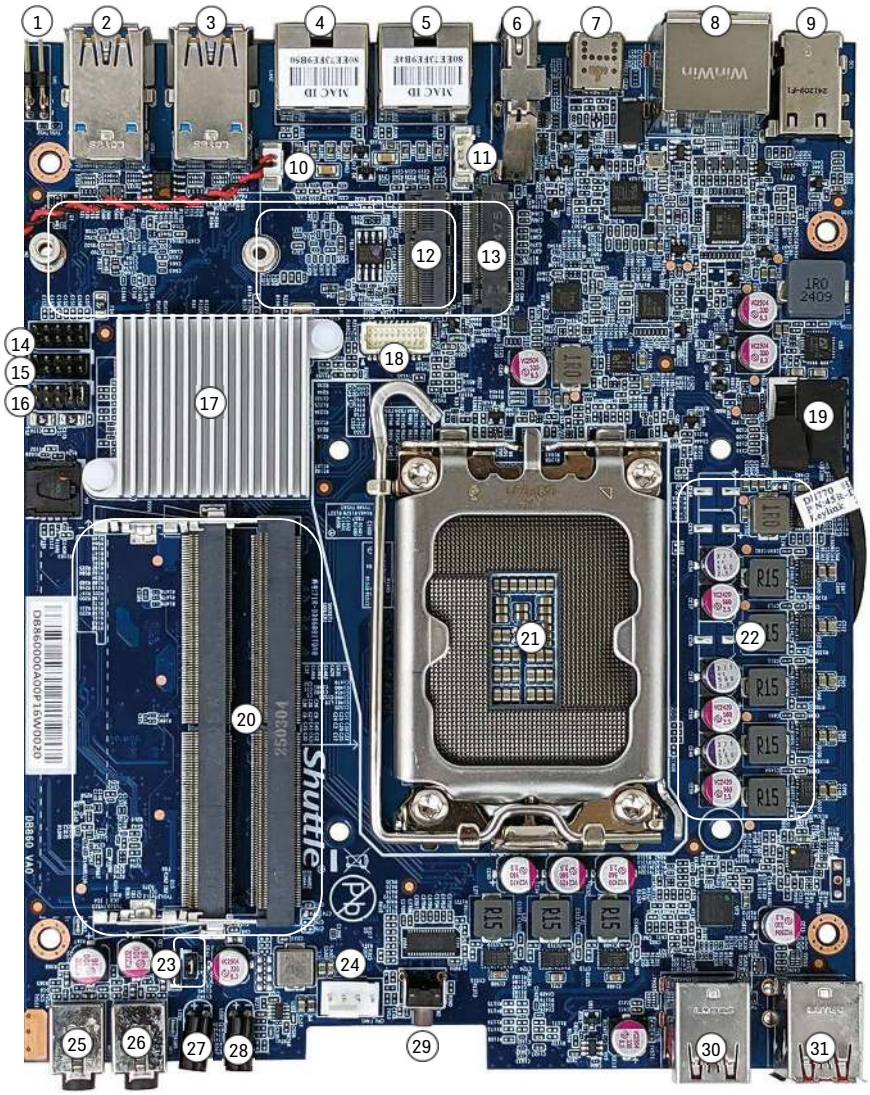

1. Microphone input
2. Headphones output
3. LED indicator for power state
4. LED indicator for storage activity
5. Power button
6. 3x USB 3.2 Gen 2 port (Type-A)
7. 1x USB 3.2 Gen 2 port (Type-C), supports 3A charging
8. 2x WLAN perforation
9. COM 1 port supports RS232/RS422/RS485
10. COM 2 port supports RS232 (or optional VGA port for analog displays)
11. DC-in connector for power adapter supports 19.5V
12. 1x HDMI 2.1 port (supports 8K / 60 Hz)
13. 1x HDMI 2.0 port (supports 4K / 60 Hz)
14. USB4/20 Gbps (USB-C), also supports DisplayPort 1.4a and 3A charging
15. DisplayPort 1.4a
16. RJ45 2.5G LAN port (Intel 226)
17. RJ45 Gigabit LAN port (Intel 219)
18. 4x USB 3.2 Gen 1 port (Type-A)
19. 4-pin connector (2.54 mm pitch) for external power button, Clear CMOS button and 5V DC voltage

20. Threaded holes (M3)
21. 2x hole for Kensington Lock

22. VESA mount (two parts)

## Mainboard

Back panel




Front panel

Back view



Front view




1. 4-pin connector (2.54 mm pitch) for external power button, Clear CMOS button and 5V DC voltage
2. 2x USB 3.2 Gen 1 port (blue)
3. 2x USB 3.2 Gen 1 port (blue)
4. RJ45 1.0G LAN port (Intel 219)
5. RJ45 2.5G LAN port (Intel 226)
6. DisplayPort (DP 1.4a)
7. USB-C supports DP 1.4a, USB4 and 3A charging
8. Bottom: HDMI 2.1 port, Top: HDMI 2.0 port
9. DC-in connector for power adapter
10. Connector for CMOS battery
11. Onboard USB 2.0 connector (4-pin)
12. M2-2230E slot for WLAN card
13. M.2-2280M slot for SSD card
14. Onboard COM 1 port supports RS232/RS422/RS485
15. Onboard COM 2 port supports RS232
16. Jumper for COM 1/2 auxiliary voltage setting (0/5/12 V)
17. Intel B860 chipset with heat sink
18. Onboard VGA connector
19. SATA v3.0 connector
20. 2x SO-DIMM slot for DDR5 memory
21. LGA1851 processor socket
22. CPU Voltage Regulator
23. Always-Power-On jumper (JP1)
24. 4-pin connector for cooling fan
25. Microphone input
26. Headphones output
27. LED indicator for power state
28. LED indicator for storage activity
29. Power button
30. 2x USB 3.2 Gen 2 port (1x Type-A red, 1x Type-C)
31. 2x USB 3.2 Gen 2 port

## REQUIRED COMPONENTS

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

Shuttle XPC slim Barebone DB860







### LGA1851 Processor

Intel Core Ultra 5/7/9 - 200 series “Arrow Lake-S”
TDP max. 65 W



### Memory Modules

Up to two DDR5-5600 (or higher)
SO-DIMM memory modules max. 48 GB each
Total capacity: 96 GB



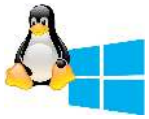
### 2.5" Storage Drive

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



### M.2 SSD

M.2-2280 SSD storage (SATA or PCIe/NVMe)



### Operating System

Windows 11 or Linux (64-bit only)

## OPTIONAL ACCESSORIES FROM SHUTTLE



### VGA port adapter **PVG01**

Installing PVG01 means one serial port (COM) less can be used on the backpanel.



### WLAN-Accessory **WLN-M12**

M.2-2230 card supports WLAN-ax (Wi-Fi 6E) and Bluetooth. Including 2 antennas.



### LTE Adapter Kit **WWN03**

allows the installation of an M.2 LTE card and nano SIM card (occupies the 2.5” bay)



### Cable **CXP01**

Cable for external push button switch (without button)



### Vertical Stand **PS02**

for vertical operation



### DIN-Rail Kit **DIR01**

This mounting kit allows the installation on a standard 35 mm DIN-Rail



### Rack Mount Kit **PRM01**

2U front plate to install two 1.3L Shuttle XPCs in a 19" cabinet.

## Product Comparison: Shuttle XPC slim 1.3L PCs with Intel 6xx/7xx/8xx chipsets

| Model | DH610S | DH610 | DH670 | DH670V2 | DH770 | DH810 | DB860 |
|---|---|---|---|---|---|---|---|
| Processor Support | Intel Core, Socket LGA1700, TDP max. 65 W<br>Code name "Alder Lake-S"/"Raptor Lake-S (Refresh)" – Gen 12/13/14 | | | | | Intel Core Ultra, Socket LGA1851<br>max. 65 W, Code name "Arrow Lake-S" | |
| Cooling | Heat-pipe with 2x 60 mm Fan | | | | Heat-pipe with 2x 70 mm Fan | | |
| Chipset | Intel H610 | Intel H610 | Intel H670 | Intel H670 | Intel H770 | Intel H810 | Intel B860 |
| OS Support | Windows 10/11 and Linux (64-bit) | | | | | Windows 11 and Linux (64-bit) | |
| Display Supp. | max. 2 *) | max. 3 | max. 4 | max. 4 | max. 4 | max. 3 | max. 4 |
| SO-DIMM RAM Slots | max. 2x 32 GB<br>DDR4-3200/2666 | | | | max. 2x 32 GB<br>DDR5-5600 | max. 2x 48 GB<br>DDR5-5600 | |
| 2.5" bay | 1x 2.5" drive bay, SATA connector, max. height 12.5 mm | | | | | | |
| M.2-2280 SSD Slot | 1x<br>PCIe 3.0/SATA | 1x<br>PCIe 3.0/SATA | 1x<br>PCIe 4.0/SATA | 1x<br>PCIe 4.0/SATA | 1x<br>PCIe 4.0/SATA | 1x<br>PCIe 4.0/SATA | 1x<br>PCIe 5.0/SATA |
| WLAN Slot | M.2-2230E | | | | | | |
| Buttons/LED | Power-Button, Power LED, HDD LED | | | | | | |
| Card Reader | No | No | Yes | No | No | No | No |
| Graphics Ports | HDMI 2.0b<br>DP 1.4 | HDMI 2.0b<br>2x DP 1.4 | 2x HDMI 2.0b<br>2x DP 1.4 | 2x HDMI 2.0b<br>2x DP 1.4 | 2x HDMI 2.0b<br>2x DP 1.4 | 1x HDMI 2.1<br>1x DP 1.4a<br>1x USB4 (DP, 3A) | 1x HDMI 2.1<br>1x HDMI 2.0<br>1x DP 1.4a<br>1x USB4 (DP, 3A) |
| USB 3.2 Gen2 | – | – | 4 | 4 | 4 | 2 (1x Type-C) | 4 (1x Type-C) |
| USB 3.2 Gen1 | 4 (1x Type-C) | 4 (1x Type-C) | 4 (1x Type-C) | 4 (1x Type-C) | 4 (1x Type-C) | 2 | 4 |
| USB 2.0 | 4 | 4 | – | – | – | 4 | – |
| COM Ports | – | 2 | 2 | 2 | 2 | 2 | 2 |
| Network (LAN) | Single LAN<br>Intel 219 (1G) | Dual LAN<br>Intel 225 (2.5G)<br>Intel 219 (1G) | Dual LAN<br>Intel 210 (1G)<br>Intel 211 (1G) | Dual LAN<br>Intel 225 (2.5G)<br>Intel 225 (2.5G) | Dual LAN<br>Intel 226LM (2.5G)<br>Intel 226LM (2.5G) | Dual LAN<br>Intel 226 (2.5G)<br>Intel 219 (1G) | Dual LAN<br>Intel 226 (2.5G)<br>Intel 219 (1G) |
| AUDIO | Mic-Input, Line-Out (Realtek ALC662/897/888S) | | | | Mic-Input, Line-Out (Realtek ALC888S) | | |
| Optional Accessories | WLAN Kit: **WLN-M12**, Vertical Stand: **PS02**, Rackmount Kit: **PRM01**<br>VGA Port: **PVG01**, Power Button Cable: **CXP01**, DIN-Rail Mount: **DIR01**, LTE/G-Kit: **WWN03** | | | | | | |
| VESA Mount | optional **PV04** | supplied | supplied | supplied | supplied | supplied | supplied |
| Power Adap. | 120 W / 19 V | | | | | | 180 W / 19 V |
| DC-IN Support | 19V | 12V+19V | 19V | 19V | 19V | 12V+19V | 12V+19V |

### Product Images

DH610 / DH610S




DH670**), DH670V2 and DH770




DH810




DB860




DH610S



DH610



DH670(V2) and DH770



DH810



DB860



*) DH610S supports 3 displays, if equipped with VGA port (accessory PVG01)
**) DH670 supports Card Reader in the front panel (not shown in the picture)

## Product Comparison: Shuttle XPC slim PCs with Intel 800 series chipset

| MODEL | DH810 | DB860 | XH810 | XB860G2 |
|---|---|---|---|---|
| Processor Support | Intel Core Ultra Processors 2xx "Arrow Lake-S"<br>Socket LGA1851, TDP max. 65W | | | |
| OS Support | Windows 11 & Linux – 64-bit | | | |
| Chipset | Intel H810<br>Supports Triple Display | Intel B860<br>Supports Quad Display | Intel H810<br>Supports Triple Display | Intel B860<br>Supports Quad Display |
| Memory | Supports max. 2x 48 GB DDR5-5600 SO-DIMM (262 Pins) | | | |
| PCIe Slots | – | – | – | 1x PCIe Gen5 x16<br>1x PCIe Gen4 x1 |
| Drive Bays | 1x 2.5" bay<br>supports SATA Raid 0+1 | 1x 2.5" bay<br>supports SATA Raid 0+1 | 2x 2.5" bay (or 1x 3.5")<br>supports SATA Raid 0+1 | – |
| M.2 Slots for SSDs | 1x M.2-2280 (PCIe X4, SATA) | 1x M.2-2280 (PCIe X4, SATA) | 1x M.2-2280 (PCIe X4, SATA)<br>1x M.2-2280 (PCIe X2, USB3.2) | 3x M.2-2280 (PCIe X4)<br>one also supports SATA |
| Front Panel Ports | 2x USB 3.2 Gen 2 (1x Type-C)<br>1x USB 2.0<br>2x Audio<br>Power-Button<br>Power-LED, HDD-LED | 4x USB 3.2 Gen 2 (1x Type-C)<br>2x Audio<br>Power-Button<br>Power-LED, HDD-LED | 2x USB 3.2 Gen 1 (1x Type-C)<br>2x USB 2.0<br>2x Audio<br>Power-Button<br>Power-LED, HDD-LED | 2x USB 3.2 Gen 1 (1x Type-C)<br>2x USB 2.0<br>2x Audio<br>Power-Button<br>Power-LED, HDD-LED |
| Back Panel Ports | HDMI 2.1 (8K)<br>DisplayPort 1.4<br>USB4/DisplayPort (USB-C)<br>2x USB 3.2 Gen 1 (blue)<br>2x USB 2.0<br>2x Intel LAN (1G and 2.5G)<br>2x COM RS232 (1x RS422/485)<br>DC input (supports 12V and 19V)<br>Header for ext. power button | HDMI 2.1 (8K)<br>HDMI 2.0<br>DisplayPort 1.4<br>USB4/DisplayPort (USB-C)<br>4x USB 3.2 Gen 2 (red)<br>2x Intel LAN (1G and 2.5G)<br>2x COM RS232 (1x RS422/485)<br>DC input (supports 19.5V)<br>Header for ext. power button | HDMI 2.1 (8K)<br>HDMI 2.0a<br>DisplayPort 1.4<br>2x USB 3.2 Gen 2 (red)<br>2x USB 2.0<br>2x Intel LAN (1G and 2.5G)<br>3x COM RS232 (1x RS422/485)<br>DC input (supports 12V and 19V)<br>Header for ext. power button | HDMI 2.1 (8K)<br>HDMI 2.0a<br>DisplayPort 1.4<br>2x USB 3.2 Gen 2 (red)<br>2x USB 3.2 Gen 1 (blue)<br>2x Intel LAN (1G and 2.5G)<br>DC input (supports 19.5V)<br>Header for ext. power button |
| Power Adap. | 120 W / 19 V<br>DC-Input supports 12V and 19V | 180 W / 19.5 V<br>DC-Input supports 12V and 19 | 120 W / 19 V<br>DC-Input supports 12V and 19V | 180 W / 19.5 V |
| Optional Accessories | Vertical stand (**PS02**)<br>Power Button cable (**CXP01**)<br>VGA-Port (**PVG01**)<br>WLAN kit (**WLN-M12**)<br>4G kit (**WWN03**)<br>DIN-Rail Kit (**DIR01**)<br>Rack-Mount Kit (**PRM01**) | Vertical stand (**PS02**)<br>Power Button cable (**CXP01**)<br>VGA-Port (**PVG01**)<br>WLAN kit (**WLN-M12**)<br>4G kit (**WWN03**)<br>DIN-Rail Kit (**DIR01**)<br>Rack-Mount Kit (**PRM01**) | Vertical stand (**PS01**)<br>Power Button cable (**CXP01**)<br>3x COM Ports (**PCM31**)<br>VGA-Port (**PVG01**)<br>WLAN kit (**WLN-M12**)<br>4G/5G kit (**WWN04**) | Power Button cable (**CXP01**)<br>VGA-Port (**PVG01**)<br>WLAN kit (**WLN-M12**)<br>4G/5G kit (**WWN04**)<br>Upgrade kit supports second power adapter (**PRC02**) |
| VESA Mount | included | included | included | included |
| Chassis Dimensions | 19 x 16.5 x 4.3 cm (ca. 1.3 L) | 19 x 16.5 x 4.3 cm (ca. 1.3 L) | 23.8 x 20 x 7.25 cm (ca. 3,5 L) | 23.7 x 20 x 9.5 cm (ca. 4,5 L) |
| Front View |  |  |  |  |
| Back View |  |  |  |  |

## SHUTTLE XPC SLIM BAREBONE DB860 — SPECIFICATIONS

| | |
|---|---|
| **CHASSIS** | Slim PC with black chassis made of metal<br>Dimensions: 190 x 165 x 43 mm (LWH) = 1.35-litre<br>Weight: 1.3 kg net and 2.1 kg gross<br>Two holes for Kensington Locks and numerous<br>threaded holes (M3) on both sides of the chassis |
| **OPERATING SYSTEM** | This system comes without an operating system.<br>It is compatible with Windows 11 and Linux (64-bit) |
| **PROCESSOR SUPPORT** | Processor Socket LGA1851<br>Supports Intel Core Ultra 200 series 9/7/5 processors<br>Code name "Arrow Lake-S"<br>Maximum supported processor power consumption (Base TDP) = 65 W<br>Supports processors with integrated graphics only **[5]**<br>Does not support the unlock-function of Intel K-Series processors.<br>Up to 24 cores (8 Performance-cores and 16 Efficient-cores)<br>Neural Processing Unit (NPU) with 13 TOPS AI-Performance |
| **PROCESSOR COOLING** | Efficient Heat-pipe processor cooling<br>with two 70 mm fans on the upper side of the chassis |
| **INTEGRATED GRAPHICS** | The features of the integrated Intel graphics function with Xe cores<br>depend on the processor type used. **[5]**<br>The PC features these graphics outputs:<br>- HDMI 2.1 supports 8K UHD with max. 7680x4320 Pixel at 60 Hz (4320p60)<br>- HDMI 2.0 supports 4K UHD with max. 4096x2160 Pixel at 60 Hz (2160p60)<br>- 2x DisplayPort (1x as USB-C) supports 4K UHD with max. 4096x2160 Pixel at 60 Hz (2160p60)<br>- optional one analog Sub-D/VGA port (in exchange for a COM port) **[4]**<br>Supports up to four independent displays with the integrated graphics function<br>DisplayPort and HDMI support multi-channel digital audio over the same cable. |
| **MAINBOARD / CHIPSET** | Mainboard in a Shuttle form factor proprietary design for the XPC DB860<br>Chipset/Southbridge: Intel® B860<br>The Northbridge is integrated in the processor.<br>Solid Capacitors for sensitive areas provide excellent heat resistance for enhanced system durability |
| **BIOS** | AMI BIOS, SPI Interface, 32 MB Flash-EEPROM<br>Supports Hardware Monitoring and Watchdog functionality<br>Supports Firmware-TPM (fTPM) v2.0 **[9]**<br>Supports boot up from external USB flash memory<br>Supports Unified Extensible Firmware Interface (UEFI)<br>Supports power on after power failure **[7]** |
| **MEMORY SUPPORT** | 2x SO-DIMM slot with 262 pins<br>Supports DDR5-5600 (PC5-44800) SDRAM at 1.1 V<br>Supports Dual Channel mode<br>Supports a maximum of 48 GB per DIMM,<br>maximum total size: 96 GB<br>Note: Supports two unbuffered DIMM modules (no ECC or registered) |
| **DRIVE BAY** | 1x 6.35 cm / 2.5" storage bay supports one hard disk or SSD drive with SATA connector<br>Device height: 12.5 mm (max.) |
| **SATA CONNECTORS** | 1x Serial-ATA III, 6 Gb/s (600 MB/s) bandwidth<br>With Serial-ATA power connector (onboard)<br>Supports SATA RAID 0 and 1 (with 2.5" SSD drive and M.2 SSD card) |
| **M.2-2280M SSD SLOT** | The M.2 2280M slot provides the following interfaces:<br>- PCI-Express Gen. 5.0 X4, supports NVMe<br>- SATA v3.0 (max. 6 Gbps)<br>It supports M.2 cards with a width of 22 mm and a length of 80 mm (type 2280)<br>Supports M.2 SSDs with SATA or PCI-Express interface<br>Supplied M.2 SSD heat sink Kit with thermal pads |
| **M.2-2230E SLOT FOR WLAN CARDS** | Interfaces: PCI-Express X1, USB 2.0 and CNVi<br>Supports M.2 cards with a width of 22 mm and a length of 30 mm (type 2230)<br>Supports WLAN expansion cards (optional Shuttle accessory: **WLN-M12**) |

| | |
|---|---|
| **AUDIO** | Audio Realtek® ALC888S High-Definition Audio<br>Two analog audio connectors (3.5 mm) on the front panel:<br>1) 2-channel line-out (head-phones)<br>2) microphone input<br>Digital multi-channel audio output: by HDMI and DisplayPort |
| **DUAL 2.5G LAN CONTROLLER** | On the back panel are two RJ45 network ports with status LEDs:<br>1) left: 2.5G LAN port (Intel 226 chip) supports 100 / 1.000 / 2.500 Mbps operation<br>2) right: 1.0G LAN port (Intel 219 chip) supports 10 / 100 / 1.000 Mbps operation<br>Supports WAKE ON LAN (WOL) **[10]**<br>Supports network boot by Preboot eXecution Environment (PXE) |
| **FRONT PANEL CONNECTORS** | Microphone input<br>Audio Line-out (headphones)<br>3x USB 3.2 Gen 2 Type A (red)<br>1x USB 3.2 Gen 2 Type C supports 3A charging current<br>Power button<br>Power LED (blue)<br>HDD LED (yellow) |
| **BACK PANEL CONNECTORS** | 1x HDMI 2.1 supports 8K/60Hz **[1]**<br>1x HDMI 2.0 supports 4K/60Hz **[1]**<br>1x DisplayPort (DP 1.4a) **[2]**<br>1x USB4 as USB-C port supports DP 1.4a, USB4 (20 Gbit/s) and 3A charging current<br>Optional: 1x D-Sub VGA connector (Accessory **PVG01 [4]**)<br>4x USB 3.2 Gen 1 Type A (blue)<br>1x 2.5G LAN (RJ45, Intel i225)<br>1x 1.0G LAN (RJ45, Intel i219)<br>2x RS232 serial port, 9-pin D-Sub (5/12V, 1x RS422/RS485) **[3]**<br>1x DC-input connector for external power adapter (supports 12V and 19.5V)<br>1x 4-pin connector (2.54 mm pitch) supports:<br>- external power on button<br>- Clear CMOS function<br>- +5V DC voltage for external components<br>2x perforation for optional Wireless LAN antennas |
| **OTHER ONBOARD CONNECTORS** | 1x jumper JP1 for power-on-after-power-fail (hardware solution) **[7]**<br>1x analog VGA graphics header VGA1 (2x 10-pin, 1 mm pitch) **[4]**<br>2x serial interface (COM) occupied by back panel connectors<br>1x USB 2.0 (4-pin) for optional accessory WWN03 (LTE kit)<br>1x fan connector (4-pin) occupied by the cooling system<br>1x connector for CMOS battery (occupied) |
| **POWER ADAPTER** | External 180 W power adapter (fanless)<br>Input: 100~240 V AC, 50~60 Hz, max. 2.5 A<br>Output: 19.5 V DC, max. 9.23 A, max. 180 W output wattage<br>DC Connector: 5.5/2.5 mm (outer/inner diameter)<br>AC mains cable: 3 pins, ca. 1.7 m length, with C5/C6 coupler (called "Mickey Mouse" or "Clover-leaf") for the power adapter and CEE-7/7 plug with earth-contact (type E+F) for the power outlet<br>The DC-input of the computer supports an external power source with 12V and 19.5V. |
| **BUTTON CELL BATTERY** | The product contains a built-in 3V button cell battery<br>For further information see footnote **[11]** |
| **SUPPLIED ACCESSORIES** | Multi-language user guide (EN, DE, FR, ES, JP, KR, SC, TC)<br>VESA mount for 75/100 mm standard (two metal brackets)<br>Four screws M3 x 5 mm (screws together VESA mount and PC)<br>Four screws M4 x 10 mm (to affix VESA mount on the PC)<br>Four screws M3 x 4 mm (to mount a 2.5" storage device into the bay)<br>Two screws M3 x 5 mm (silver colour, to mount two M.2 cards)<br>M.2-2280 SSD heat sink kit with four screws and three thermal pads<br>Driver DVD (Windows 11 - 64-bit)<br>Serial ATA cable for 2.5" drive including power cable<br>External 180 W power adapter with power cord<br>Protection cap for CPU socket (do not use if heatpipe or fan is mounted)<br>Heatsink compound |

| | |
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| **OPTIONAL ACCESSORIES** | **PVG01:** optional D-Sub VGA video output **[4]**<br>**WLN-M12:** WLAN module in M.2-2230 format supports WLAN-ax and Bluetooth with two external antennas.<br>**WWN03:** LTE adapter kit with antennas, but without LTE card **[8]**<br>**PS02:** Stand for vertical operation<br>**CXP01:** adapter cable for external power button<br>**PRM01:** 2U rack mount front plate for two Shuttle XPC slim PCs<br>**DIR01:** DIN-Rail mounting kit |
| **ENVIRONMENTAL SPECIFICATIONS** | Operating temperature range: 0~50 °C **[6]**<br>Relative humidity, non-condensing: 10~90 % |
| **CERTIFICATIONS / COMPLIANCE** | EMI: FCC, CE, BSMI, RCM, VCCI<br>Safety: ETL, CB, BSMI<br>Other: RoHS, Energy Star, ErP |
| **CONFORMITY** | 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:<br>(1) 2004/108/EC relating to electromagnetic compatibility (EMC),<br>(2) 2006/95/EC relating to Electrical Equipment designed for use within certain voltage limits (LVD),<br>(3) 2009/125/EC relating to ecodesign requirements for energy-related products (ErP) |

**[1] HDMI output** supports DVI-D with optional adapter

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

**[4] Optional D-Sub/VGA connector**
The mainboard features one analog graphics port VGA1 on the mainboard. This signal can be lead to the outside as a 15-pin D-Sub VGA connector on the backpanel by using the optional adapter **PVG01**. However doing so means one serial port (COM) less can be used on the backpanel. The integrated graphics supports a maximum of four displays simultaneously.

**[5] Intel processors without integrated graphics** (ID ends with "F", e.g. Core Ultra 7 265**F**) are not compatible.

**[6] Operating temperature**
For high ambient temperatures over 40 °C we strongly recommend to use SSDs (supporting at least 70 °C) and rugged SO-DIMM memory modules with a temperature range of up to 95 °C.

**[7] 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 DB860 also comes with a hardware-based solution. By removing Jumper JP1 (on the mainboard next to the power button) the system will start unconditionally once power is supplied.

**[8] Optional Accessory WWN03 (LTE kit)**
The Shuttle XPC accessory WWN03 allows this PC to be upgraded with an LTE/4G function for mobile network. The LTE card will occupy the 2.5" bay, so you will have to use an M.2 SSD as a mass storage device. The required LTE/4G card in M.2-3042 format and an activated Nano SIM card is not included in the scope of delivery.

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

**[10] Note on the Wake-on-LAN function**
Summary: Please use the 2.5G network connection for the WOL function.
Explanation: This PC has two network connections (LAN ports):
(1) 1.0G (Intel 219 chip)
(2) 2.5G (Intel 226 chip)
The PC supports the Wake-on-LAN function (WOL) to start the switched-off computer (from S5 mode) via the network. The following settings can be found in the 'Advanced' BIOS setup:
(1) Wake Up by LAN = Enabled (this activates WOL)
(2) Power-On after Power-Fail = Power On by LAN
The second setting defines the behaviour after a power failure – in this case, the PC should not switch on immediately as soon as power is restored, but should wait for the power-on signal via the network connection. However, after a power failure, switching on via the network (WOL) only works via the 2.5G network port for technical reasons. Do not use the 1.0G network port for the WOL function if you expect that the PC's power supply could be interrupted.

**[11] Button Cell Battery**

- Purpose:
  The built-in button cell battery on the mainboard supplies the CMOS memory and the Real-Time Clock (RTC) with power so that certain settings are retained and the internal clock continues to run – even if the PC is completely switched off or disconnected from the power supply.
- Specification:
  Model: Lixing KTS CR2032 with cable and connector (Molex 51021-8602, 2-pin, 1.25 mm pitch)
  Type: Lithium metal battery, non-rechargeable, transport identification: UN 3091 (battery is built-in)
  Nominal voltage: 3.0V, nominal capacity: 220 mAh (0.66 Wh)
  Dimensions: 20 mm diameter, 3.2 mm thickness
  Weight: 3.2 g, of which 0.063 g lithium (2.1%)
  Manufacturer: Wuhan Lixing (Torch) Power Sources Co, Ltd, Address: No. 7 Plot, Guandong, Science and Technology Industrial Park, East Lake Development Zone, Wuhan, Hubei, China
- Certificates:
  Material Safety Data Sheet (MSDS), UN38.3 test report, ISO 9001 of the manufacturer, EU DoC
  Download here: https://go.shuttle.eu/Py1Jn
- Replace the battery:
  If the PC issues error messages about the clock or CMOS when starting up, the system's CMOS battery probably needs to be replaced. Use a model with the same technical characteristics as a replacement battery or contact our technical support at support@shuttle.eu.
  The replacement of a CMOS battery may only be carried out by qualified specialist personnel. Improper handling can lead to damage to the mainboard, loss of data or electrical risks. Disconnect the device from the power supply before opening it. Make sure that you do not injure yourself on the sharp metal edges inside the computer. Open the device according to the Quick Installation Guide supplied. Find the battery and pull on the connecting cable so that the plug comes off the mainboard (see photo below). Before pulling out, pay attention to the polarity based on the cable colours (red and black). Carefully remove the old battery, which is stuck on with an adhesive pad. With the new battery, remove the protective film from the adhesive pad and stick the battery in the same position, connect the cable and reassemble the PC. When switching on for the first time, press the "DEL" key, load the "Default Settings" in the BIOS and make any other necessary settings before saving the settings and exiting the BIOS setup.

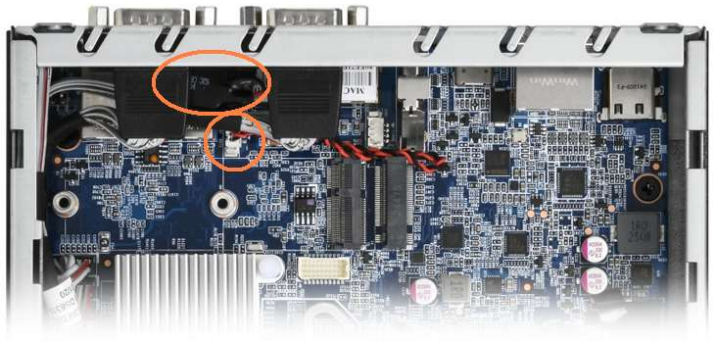
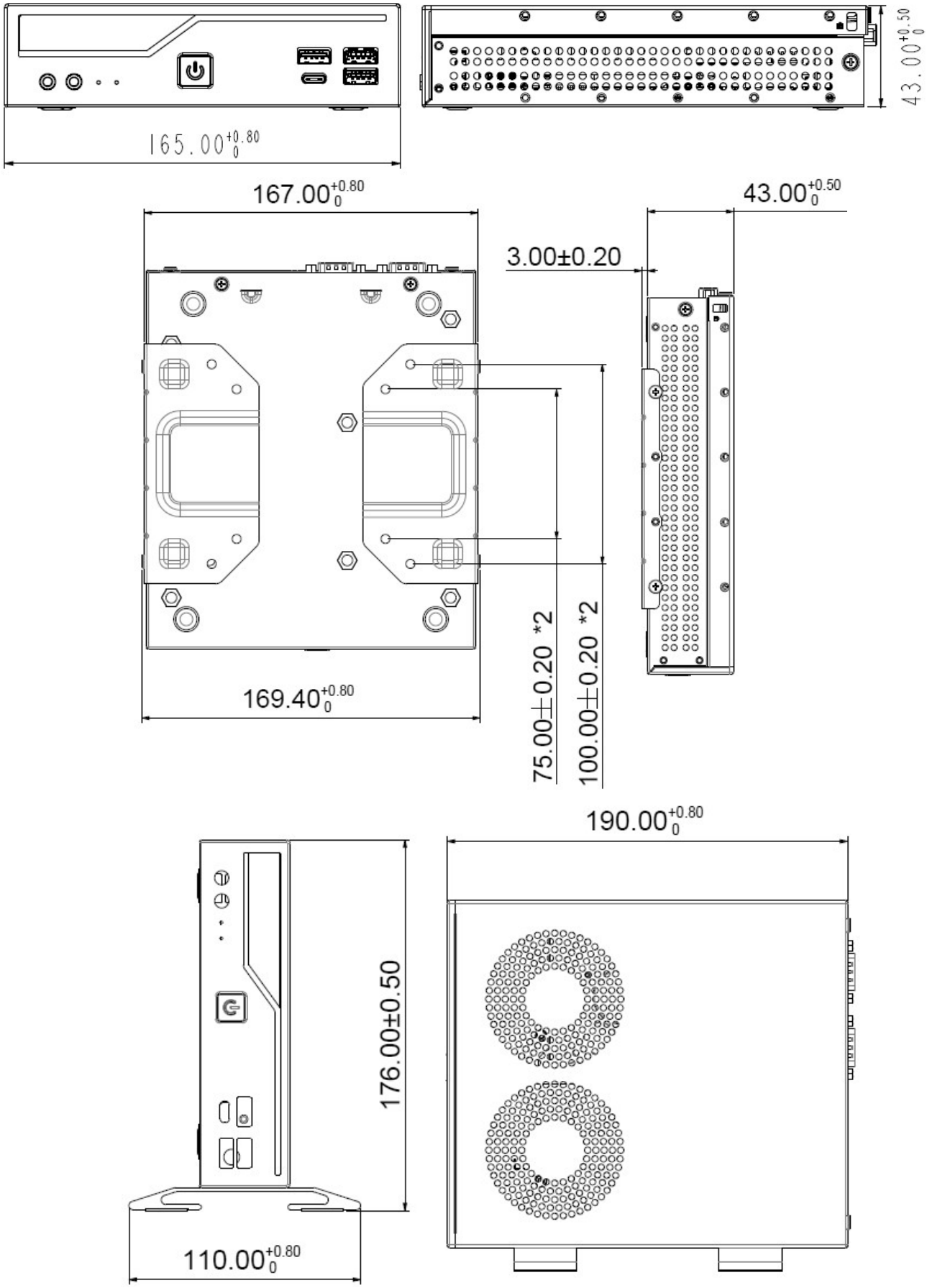


Photo: Position of the button cell battery and the connector on the mainboard with the computer housing open.

- Disposal:
  Batteries are classified as hazardous waste and must be disposed of properly. Do not throw them in the household trash. Dispose of batteries at the designated collection points prescribed by law in your country, e.g. at the dealers' collection points.
- Safety instructions:
  This product contains a lithium button cell battery that can cause serious or fatal injury within 2 hours if swallowed. Not intended for children under the age of three.

## Technical Drawings DB860



## INTEL CORE ULTRA GEN. 2 DESKTOP PROCESSOR FAMILY

**Socket LGA1851, Code Name "Arrow Lake-S" processor overview (Date: May 2025)**
**Each processor containing an NPU capable of upto 13 TOPS**
**Processors with a TDP of more than 65W and processors without graphics function (ID ends with "F") are not supported by DB860 (marked in red).**

| PROCESSOR | MODEL | P-CORES/ THREADS | P-CORES Base/Turbo2.0 | E-CORES | E-CORES Base/Turbo2.0 | SMART CACHE | BASE TDP | MEMORY SUPPORT | Intel® Graphics Xe Cores / Clock Rate |
|---|---|---|---|---|---|---|---|---|---|
| Core Ultra 9 | **285K** | 8 / 8 | 3.7 – 5.5 GHz | 16 | 3.2 – 4.6 GHz | 36 MB | **125 W** | DDR5-5600/6400 | 4 Cores, max. 2.00 GHz |
| | **285** | 8 / 8 | 3.7 – 5.4 GHz | 16 | 1.9 – 4.6 GHz | 36 MB | 65 W | DDR5-5600/6400 | 4 Cores, max. 2.00 GHz |
| | **285T** | 8 / 8 | 1.4 – 5.3 GHz | 16 | 1.2 – 4.6 GHz | 36 MB | 35 W | DDR5-5600/6400 | 4 Cores, max. 2.00 GHz |
| Core Ultra 7 | **265K** | 8 / 8 | 3.9 – 5.4 GHz | 8 | 3.3 – 4.6 GHz | 30 MB | **125 W** | DDR5-5600/6400 | 4 Cores, max. 2.00 GHz |
| | **265KF** | 8 / 8 | 3.9 – 5.4 GHz | 8 | 3.3 – 4.6 GHz | 30 MB | **125 W** | DDR5-5600/6400 | **None** |
| | **265** | 8 / 8 | 2.4 – 5.2 GHz | 8 | 1.8 – 4.6 GHz | 30 MB | 65 W | DDR5-5600/6400 | 4 Cores, max. 1.95 GHz |
| | **265F** | 8 / 8 | 2.4 – 5.2 GHz | 8 | 1.8 – 4.6 GHz | 30 MB | 65 W | DDR5-5600/6400 | **None** |
| | **265T** | 8 / 8 | 1.5 – 5.2 GHz | 8 | 1.2 – 4.6 GHz | 30 MB | 35 W | DDR5-5600/6400 | 4 Cores, max. 1.95 GHz |
| Core Ultra 5 | **245K** | 6 / 6 | 4.2 – 5.2 GHz | 8 | 3.6 – 4.6 GHz | 24 MB | **125 W** | DDR5-5600/6400 | 4 Cores, max. 1.90 GHz |
| | **245KF** | 6 / 6 | 4.2 – 5.2 GHz | 8 | 3.6 – 4.6 GHz | 24 MB | **125 W** | DDR5-5600/6400 | **None** |
| | **245** | 6 / 6 | 3.5 – 5.1 GHz | 8 | 3.0 – 4.5 GHz | 24 MB | 65 W | DDR5-5600/6400 | 4 Cores, max. 1.90 GHz |
| | **245T** | 6 / 6 | 2.5 – 5.1 GHz | 8 | 1.9 – 4.5 GHz | 24 MB | 35 W | DDR5-5600/6400 | 4 Cores, max. 1.90 GHz |
| | **235** | 6 / 6 | 3.4 – 5.0 GHz | 8 | 2.9 – 4.4 GHz | 24 MB | 65 W | DDR5-5600/6400 | 3 Cores, max. 2.00 GHz |
| | **235T** | 6 / 6 | 2.2 – 5.0 GHz | 8 | 1.6 – 4.4 GHz | 24 MB | 35 W | DDR5-5600/6400 | 3 Cores, max. 2.00 GHz |
| | **225** | 4 / 4 | 3.3 – 4.9 GHz | 4 | 1.8 – 4.4 GHz | 20 MB | 65 W | DDR5-5600/6400 | 2 Cores, max. 1.80 GHz |
| | **225F** | 4 / 4 | 3.3 – 4.9 GHz | 4 | 2.7 – 4.4 GHz | 20 MB | 65 W | DDR5-5600/6400 | **None** |
| | **225T** | 4 / 4 | 2.5 – 4.9 GHz | 4 | 2.7 – 4.4 GHz | 20 MB | 35 W | DDR5-5600/6400 | 2 Cores, max. 1.80 GHz |

**K = unlocked, T = Power optimized lifestyle, F = without integrated graphics, Base TDP = Base Thermal Design Power (max. Base Power Consumption).**

Note: The Shuttle XPC slim Barebone **DB860** does not support the Unlock-function of Intel **K-Series** processors.
**P-Cores:** Performance-Cores (without Hyper-Threading/SMT support), **E-Cores:** Efficient-Cores
**Core Clock:** the listed core frequency ranges from Base Frequncy to Turbo Boost 2.0 Frequency (Turbo Boost 3.0/TVB Frequency is not mentioned here)
**Base TDP:** Processor Base Power dissipation that the processor is validated to not exceed at Base Frequency (Max. Turbo Power is not mentioned here)
Please refer to the support list for detailed processor support information at global.shuttle.com.

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