Shuttle®

SPECIFICATIONS

DH810

SLIM PC

PROCESSOR	Supports Intel® Core™ Ultra 200 series 9/7/5 processors, LGA 1851 65W	
MEMORY	2 x DDR5 5600 MHz Supports dual channel up to 96GB (48GB x 2)	
VIDEO GRAPHICS	Intel Xe Graphics	
VIDEO OUTPUT	HDMI 2.1 (TMDS) x 1 + DisplayPort x 2 (includes 1 from USB4 port) Supports triple independent displays, Supports 4K Ultra HD (up to 8K supported via HDMI)	
AUDIO	Realtek ALC888S HD audio	
ETHERNET	Intel 2.5GbE LAN x1 (left) Intel 1GbE LAN x 1 (right) Supports Wake on LAN function	100/1000/2500 Mb/s operation (left LAN port) 10/100/1000 Mb/s operation (right LAN port)
STORAGE INTERFACE	SATA 6 GB/s, NVMe interface	
ONBOARD CONNECTORS	(1) 4 pin fan connector (1) VGA (for PVG01 use) (1) 1x4 pin USB 2.0 header (for WWN03) (1) SATA connector w/ power	(1) Front audio header (1) Auto power on header (1) RS232 voltage switch
FRONT PANEL	(1) Power Button (1) Power LED (1) HDD LED (2) USB 3.2 Gen 2 (Type-C x 1)*	(2) USB 2.0 (1) Microphone-in (1) Line-out
BACK PANEL	(1) HDMI 2.1 (8K/60Hz support) (1) DisplayPort 1.4a (2) RJ45 LAN port w/ LED (2.5G) (2) USB 3.2 Gen 1 (2) USB 2.0 (1) USB 4.0 (20Gb/s, Type-C w/ DP)	(1) RS232** (1) RS232/RS422/RS485 (1) External 4 pin header (1) DC-in (supports 12V/19V) (1) Kensington Lock
DRIVE BAYS	(1) 2.5" HDD/SSD bay	
DIMENSIONS	7.5(L) x 6.5(W) x 1.7(H) inches	
POWER	Input: 100 - 240V AC Output: 19V/6.32A DC	120W power supply
ACCESSORIES	Quick Guide Driver DVD Screw package Power cord 120W adapter	VESA mount VESA mount quick guide Thermal grease HDD screw pack
OPERATING TEMPERATURE	0°C~50°C	
EXPANSION SLOT	(1) M.2 2280 Type M key socket	(1) M.2 2230 Type E key socket
OS SUPPORT	Windows 11 64 bit, Linux	

*Type-C on front panel supports 3A charging current **RS232 ports supports 0/5/12V output. Please refer to quick guide for voltage setting.

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CHASSIS	Black slim type metal chassis Kensington lock slots on the sides as part of anti-theft system Dimensions: 7.5 (L) x 6.5 (W) x 1.7 (H) inches Weight: 2.86 LBS (net) / 4.63 LBS (gross)
MAINBOARD AND CHIPSET	Mainboard in Shuttle form factor proprietary design for XPC DH810 Chipset: Intel® H810, passive chipset cooling with heat sink Supports hardware monitoring and watch dog functionality Solid capacitors for sensitive areas provide excellent heat resistance for enhanced system durability
BIOS	AMI BIOS, SPI Interface, 32 MB Flash-EPROOM Supports Firmware-TPM (fTPM) v2.0 **[9]*** Supports boot up from external USB flash memory Supports Unified Extensible Firmware Interface (UEFI) Supports power on after power failure **[7]***
POWER SUPPLY	External 120W power adapter (fanless) AC input voltage: 100 - 240V, 50/60 Hz Output: 19V DC 6.32A, max 120W DC connector: 5.5/2.5mm (outer/inner diameter) Remark: The DC-input of the computer supports 19V±5% or 12V±5% AC mains cable: 3 pins, ca. 1.7 m length, with C5/C6 coupler for the power adapter and CEE-7/7 plug with earth-contact (type E + F) for the power outlet
OPERATING SYSTEM	The system comes without an operating system installed. Compatibility: Windows 11, Linux 64bit
PROCESSOR SUPPORT	LGA 1851 Socket supports Intel® Core® Ultra 200 series 9/7/5, codename “Arrow Lake-S” Supports processors with integrated graphics only **[5]*** Max supported processor power consumption (TDP): 65W The unlock function for Intel® K-Series processors is not supported with this model Up to 24 cores (8 Performance-cores and 16 Efficient-cores) Neural Processing Unit (NPU) with 13 TOPS AI-Performance Please refer to the support list for more detailed processor information at global.shuttle.com
SYSTEM COOLING	Heatpipe cooling technology, two 70 mm fans on the upper side of the chassis
MEMORY SUPPORT	2 x 262 pin SODIMM slots Supports DDR5 5600 SDRAM at 1.1V Supports Dual Channel mode Supports a max. of 48GB per DIMM, up to 96GB total Supports two unbuffered DIMM modules (no ECC or registered)
DRIVE BAYS	1 x 2.5" drive bay supports one hard disk or SSD drive, max height 12.5 mm
M.2 SLOTS	M.2 2280 M slot provides the following interfaces: PCI-Express Gen 4.0 X4 (supports NVMe), SATA v3.0 (6 Gb/s) interface Supports M.2 cards with a width of 22 mm and a length of 30 mm (type 2280). Supports M.2 SSDs with SATA or PCI-Express interface. M.2 2230 E slot provides the following interfaces: PCI-Express v2.0 X1, USB 2.0 interface Supports M.2 cards with a width of 22 mm and a length of 30 mm (type 2230) Supports WLAN extension cards (optional WLN-M1 accessory)
AUDIO	Realtek® ALC 888S HD audio Two analog audio connectors (3.5 mm) on the front panel: 2 channel line-out (headphones), Microphone input Digital multi-channel audio output (HDMI and DisplayPort)

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INTEGRATED GRAPHICS	Intel Xe graphics function features depend on the processor type used [5]* This model has three video outputs: -DisplayPort 1.4a x 2 (supports 2160p/60 Hz) -HDMI 2.1 x 1 (supports 4320p/60 Hz) -Optional analog D-sub/VGA video output [4]* Supports displays with 4K Ultra HD at 3840 x 2160 resolution (DisplayPort) or 8K Ultra HD at 7860x4320 resolution (HDMI) Supports three independent displays with integrated graphics function DisplayPort and HDMI support multi-channel digital audio over the same cable	
MULTI-CHANNEL AUDIO	High Definition Audio with Realtek ALC 888S codec Two analog audio connectors (3.5 mm) on the front panel: -2 channel line-out (headphones) -MIC input Digital multi-channel audio output: HDMI and DisplayPort	
DUAL 2.5G LAN CONTROLLER	Dual network with two RJ45 ports with status LEDs: 1) Left: 2.5G LAN port, supports 100/1000/2500 Mb/s operation 2) Right: 1.0G LAN port, supports 10/100/1000 Mb/s operation Supports network boot by Preboot eXecution environment (PXE) Supports Wake-on-LAN	
SATA CONNECTORS	The mainboard provides one Serial-ATA III interface, max 6Gb/s supported Serial-ATA power connector (onboard)	
FRONT PANEL CONNECTORS	Microphone input Headphone output (line-out) USB 3.2 Gen 2 x 1 (Type-A) USB 3.2 Gen 2 x 1 (one Type-C)	USB 2.0 x 2 (Type-A) Power button Power indicator (Blue LED) Hard disk drive indicator (Yellow LED)
BACK PANEL CONNECTORS	HDMI 2.1 x 1 (supports 8K/60Hz) [1]* DisplayPort 1.4a x 1 [2]* VGA connector (optional PVG01) [4]* USB 3.2 Gen 1 x 2 2.5G LAN (RJ45) x 1 1.0G LAN (RJ45) x 1	USB4 (USB-C, supports DP 1.4a and 3A charging) 4-pin connector Kensington Lock x 2 WLAN antenna holes x 2 RS232 x 2 (1 x RS422/RS485) [3]* DC-input connector for external power adapter (12V/19V support)
OTHER CONNECTORS (ONBOARD)	Analog VGA graphics (2x10 pin) [4]* Connector for CMOS battery (occupied) Serial interface (COM) x 2 (occupied)	Fan connectors x 1 (4-pin), one occupied by cooling system Power on after power failure (hardware solution by jumper) [7]* USB 2.0 (4-pin) for optional accessory WWN03 (LTE kit)
INCLUDED ACCESSORIES	XPC installation guide Driver DVD SATA and power cables Heatsink compound External 120W power adapter with cord	M.2 2280 SSD heat sink kit VESA mount and screws (75/100mm standard) Protector cap for CPU socket (don't use if heatpipe/fan is mounted) Screw packs
OPTIONAL ACCESSORIES	VGA port adapter (PVG01) [4]* WLN-M1 (WLAN module) Vertical stand (PS02)	2U rack mount front plate for two slim PCs (PRM01) Adapter cable for external power button (CXP01) DIN-Rail mounting kit (DIR01)
ENVIRONMENTAL CRITERIA	Operating temperature: 0 - 50°C [6]*	Humidity: 10 - 90% (non-condensing)
CERTIFICATIONS	EMI: FCC, CE, BSMI, RCM, VCCI Safety: ETL, CB, BSMI	Other: RoHS, Energy Star, ErP
	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)	

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SLIM PC

[1] HDMI OUTPUT

HDMI output supports DVI-D with optional adapter

[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] SERIAL PORTS

This PC features two serial RS232 ports with 9 pin VGA connectors on the back panel (pin 9 is a multi-functional signal). 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).

[4] OPTIONAL VGA CONNECTOR

The mainboard features one analog graphics port (CN6). This 15 pin VGA connector can be lead to the outside of the back panel by using an optional adapter PVG01. Doing so will occupy one serial port (COM) on the back panel. The integrated graphics supports a maximum of four displays simultaneously.

[5] INTEL PROCESSORS WITHOUT INTEGRATED GRAPHICS

Processors ending in F (ie Core Ultra 7 265F) are not compatible

[6] HIGH AMBIENT TEMPERATURE

For high ambient temperature over 40°C, SSDs are strongly recommended instead of hard disk drives (supporting at least 70°C) and rugged SODIMM memory modules for temperature ranges 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 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 DH810 comes with a hardware based solution in these cases. By removing the 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 M.2 SSD will have to be used as mass storage device. The LTE/4G card in M.2 3042 format and an activated Nano SIM card is not included in scope of delivery.

[9] TPM FUNCTION

This product has Firmware-TPM (fTPM) v2.0. It is prepared for a hardware TPM chip, which can be fitted on request if required.

BIOS DOWNLOADS: https://global.shuttle.com/products/productsDownload?pn=DH810&c=xpc-slim
SUPPORT LIST: https://global.shuttle.com/products/productsSupportList?pn=DH810&c=xpc-slim
FAQ LIST: http://global.shuttle.com/support/faq
PRODUCT WARRANTY: https://www.shuttlecomputers.com/warrantypolicies

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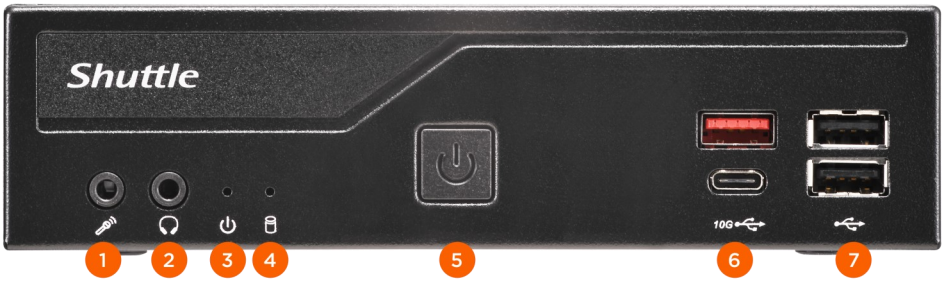
DH810

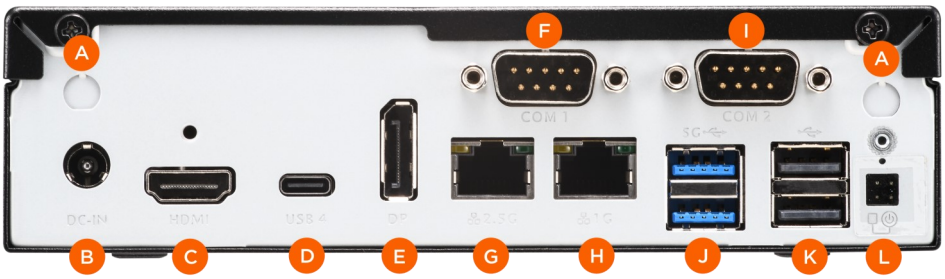
SLIM PC

Front View



1 Microphone input	**5** Power Button
2 Headphones output	**6** USB 3.2 Gen 2 x 2 (Type C x 1)
3 Power LED	**7** USB 2.0 x 2
4 Hard Disk LED	

Back View



A WLAN antenna hole x 2	**G** RJ45 2.5G LAN port (Intel 226)
B DC power input	**H** RJ45 Gigabit LAN port (Intel 219)
C HDMI 2.1 x 1	**I** RS232 (COM2)
D USB4/20Gbps (USB-C), supports DisplayPort 1.4a	**J** USB 3.2 Gen 1 x 2
E DisplayPort 1.4a	**K** USB 2.0 x 2
F RS232/RS422/RS485(COM1)	**L** External 4-pin header

Kensington lock hole on left and right side

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DH810

SLIM PC

INTEL® CORE ULTRA PROCESSORS

The DH810 is optimized for Intel® Core™ Ultra 200 series 65W processors for accelerated hybrid computing performance, making it ideal for tasks requiring high processing power. Support for up to 96GB DDR5 5600 MHz memory and Intel® UHD graphics provides smooth workflow and overall enhanced system responsiveness.

VESA MOUNTABLE

The supplied 75/100mm VESA mount allows for installation of the DH810 on walls or monitors, for use in company buildings, public institutions, or other industry buildings. With a slim size, it allows for versatile integration into hardware systems and well suited for areas with limited space.

TRIPLE DISPLAY SUPPORT

Dual DisplayPorts and one HDMI port supports triple independent outputs to deliver 8K resolution via HDMI, making it ideal for high-solution content in commercial and entertainment settings.

LOW NOISE COOLING

A heat pipe cooling system with two 70 mm fans ensures 24/7 long-term operation and suitability for working environments ranging from 0 to 50°C.

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ACCESSORY	PS02
DESCRIPTION	The PS02 stand is required for placing 1.3L slim PC models into a vertical orientation.
COMPATIBILITY	https://global.shuttle.com/products/productsSupportList?pn=PS02&c=accessory

ACCESSORY	PVG01
DESCRIPTION	The PVG01 equips compatible slim PCs with an analog VGA output, For slim 1L PCs, this means only one serial interface (COM 1) can be used after installation.
SPECIFICATIONS	Length: 6.3 inches, Back panel connector: 15 pin Mini D-sub female socket, Internal connector: Subminiature 2x10 pin female
COMPATIBILITY	https://global.shuttle.com/products/productsSupportList?pn=PVG01&c=accessory

ACCESSORY	WLN-M1
DESCRIPTION	The WLN-M1 wireless LAN kit can be used to equip XPC cube and slim series models with the wireless LAN standard 802.11 b/g/n/ac/ax at 2.4/5 GHz. The combo device supports Bluetooth 5.2.
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
OS SUPPORT	Windows 10/11, Linux (64 bit)

DH810 vs DH610

SLIM PC

MODEL	DH810	DH610
CHIPSET	Intel H810	Intel H610
PROCESSOR SUPPORT	LGA 1851, max TDP 65W 10nm Arrow Lake-S (Ultra 200 Series 9/7/5 CPU)	LGA 1700, max TDP 65W 10nm Alder Lake-S/Raptor Lake-S (12th/13th/14th Gen Core CPU) Intel® Core™ i3/i5/i7/i9, Pentium, Celeron
MEMORY	2 x 48GB DDR5 5600 MHz max	2 x 32GB DDR4 3200/2933/2666/2400/2133 MHz max
VIDEO OUTPUT	HDMI 2.1 + DisplayPort 1.4a x 1, 1 x USB4 (supports DisplayPort 1.4a), Supports triple displays Intel Xe graphics, Supports 4K/8K Ultra HD	HDMI 2.0b + DisplayPort 1.4 x 2, Supports quad displays, Supports 4K Ultra HD
AUDIO	Realtek AL888S, multi-channel HD audio	Realtek AL662/888S/897, multi-channel HD audio
ETHERNET	Intel 226 (2.5G) + Intel 219 (1G) Left 2.5G LAN: 100/1000/2500 Mbps operation Right 1.0G LAN: 10/100/1000 Mbps Supports Wake on LAN function	Intel 225 (2.5G) + Intel 219V/LM (1G) Left 2.5G LAN: 100/1000/2500 Mbps operation Right 1.0G LAN: 10/100/1000 Mbps Supports Wake on LAN function
SATA ONBOARD	SATA III 6Gb/s x 1	SATA III 6Gb/s x 1
FRONT PANEL	Power button with LED, HDD LED, MIC-in, Headphone out, USB 3.2 Gen 2 x 2 (one Type-C), USB 2.0 x 2	Power button with LED, HDD LED, MIC-in, Headphone out, USB 3.2 Gen 1 x 2 (one Type-C), USB 2.0 x 2
BACK PANEL	HDMI 2.1, DisplayPort 1.4a x 1, USB4 x 1 (USB-C, DP 1.4a) USB 3.2 Gen 1 x 2, USB 2.0 x 2 2.5G LAN (Intel 225) x 1, 1.0G LAN (Intel 219) RS232 + RS232/RS422/RS485 WLAN antenna x 2 (optional) Clear CMOS button Kensington Lock x 2	HDMI 2.0b, DisplayPort 1.4 x 2 USB 3.2 Gen 1 x 2, USB 2.0 x 2 2.5G LAN (Intel 225) x 1, 1.0G LAN (Intel 219) x 1 RS232 + 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) **[4]*** WLAN kit (WLN-M1) Cable for external power button (CXP01) 2U rack mount front plate for two slim PCs (PRM01)	Vertical Stand (PS02) VGA adapter (PVG01) **[4]*** WLAN kit (WLN-M1) Cable for external power button (CXP01) 2U rack mount front plate for two slim PCs (PRM01)
EXPANSION SLOT	M.2 2280 M slot M.2 2230 E slot, Supports optional WLAN	M.2 2280 M slot M.2 2230 E slot, Supports optional WLAN
OS SUPPORT	Windows 11, Linux 64 bit	Windows 10/11, Linux 64 bit

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DH810

SLIM PC

Intel Core Ultra Gen 2 Desktop Processors (LGA 1851 Arrow Lake-S)

Processors with a TDP > 65W and without graphics function are not supported (marked in red)

Name	Model	P-Cores/ Threads	P-Cores Clock/Turbo	E-Cores	E-Cores Clock/Turbo	Smart Cache	Base TDP	Memory Support	Arc Graphics Xe Cores/Clock Rate
Core Ultra 9	285K	8 / 8	3.7 - 5.5 GHz	16	3.2 - 4.6 GHz	36 MB	125W	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	65W	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	35W	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	125W	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	125W	DDR5-5600/6400	None
	265	8 / 8	2.4 - 5.2 GHz	8	1.8 - 4.6 GHz	30 MB	65W	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	65W	DDR5-5600/6400	None
	265T	8 / 8	1.5 - 5.2 GHz	8	1.2 - 4.6 GHz	30 MB	35W	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	125W	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	125W	DDR5-5600/6400	None
	245	6 / 6	3.5 - 5.1 GHz	8	3.0 - 4.5 GHz	24 MB	65W	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	35W	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	65W	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	35W	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	65W	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	65W	DDR5-5600/6400	None
	225T	4 / 4	2.5 - 4.9 GHz	4	2.7 - 4.4 GHz	20 MB	35W	DDR5-5600/6400	2 cores, max 1.80 GHz

K = unlocked, **T** = power optimized, **F** = without integrated graphics (requires discrete graphics card), **TDP** = thermal design power.

P-Cores = Performance Cores, **E-Cores** = Efficient Cores, **Core Clock** = base frequency to turbo frequency

The DH810 does not support the unlock function of Intel K-series processors.

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