

## XH610

## SLIM PC



<b>PROCESSOR</b>	Supports Intel® 12th Gen Core® i3/i5/i7/i9 series, Pentium, and Celeron® LGA 1700 65W processors	
<b>MEMORY</b>	2 x SODIMM DDR4 2133/2400/2666/2933/3200 MHz, Supports dual channel up to 64GB (32GB x 2)	
<b>VIDEO GRAPHICS</b>	Intel UHD Graphics (depends on the processor used)	
<b>VIDEO OUTPUT</b>	HDMI 2.0b + DisplayPort 1.4a + VGA Supports triple independent displays	
<b>AUDIO</b>	Realtek ALC 662/897/888 HD audio	
<b>ETHERNET</b>	Intel 225 + 219LM 10/100/1000 MB/s operation (Intel 225)	100/100/2500 MB/s (Intel 219LM) Supports Wake on LAN function
<b>STORAGE INTERFACE</b>	SATA 6 GB/s, Supports NCQ and AHCI	
<b>ONBOARD CONNECTORS</b>	(1) J4 jumper for power on after power fail (2) 4 pin fan connector (1) SATA connector	(4) RS232 COM port (1 port is occupied) USB 2.0 headers (4-pin)
<b>FRONT PANEL</b>	(1) Power Button (1) Power LED (1) HDD LED (2) USB 2.0	(2) USB 3.2 Gen 1 (1) MIC-in (1) Line-Out
<b>BACK PANEL</b>	(1) VGA (1) HDMI 2.0b (1) DisplayPort 1.4a (2) USB 3.2 Gen 1 (2) USB 2.0	(1) DC-in (2) RJ45 Gigabit LAN (2) Antenna holes (1) Kensington Lock
<b>DRIVE BAYS</b>	(2) 2.5" HDD/SSD bay	(1) 5.25" ODD x 1 (can also be used for 1 x 2.5" drive)
<b>DIMENSIONS</b>	9.8 (L) x 7.9 (W) x 3.7 (H) inches	
<b>POWER</b>	Input: 100 - 240V AC Output: 19V/6.32A DC	120W power supply
<b>ACCESSORIES</b>	Quick Guide Screw packages Power adapter Power cord VESA mount (optional)	Driver DVD WLN-M/WLN-M1 (optional) WLAN module (optional) PCM31 adapter for COM ports x 3 (optional) CXP01 adapter cable for external power button (optional)
<b>EXPANSION SLOT</b>	(1) M.2 MAX to 2280 (NVME & SATA support) (1) M.2 MAX to 2230E (WLAN, PCI-Express Gen 2.0 X1, USB 2.0)	WLN-M/WLN-M1 optional Shuttle accessory Supports WLAN expansion cards
<b>OS SUPPORT</b>	Windows 10/11 64 bit, Linux (64 bit)	
<b>CERTIFICATION</b>	Safety: BSMI, CB 60950/62368, cTUVus Other: RoHS, Energy Star, ErP	EMI: CE, UKCA, FCC, BSMI, RCM, VCCI

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<b>CHASSIS</b>	<p>Black slim 3.5L type chassis          Horizontal or vertical orientation with optional stand PS01          Kensington lock slot on the back as part of anti-theft system          Dimensions: 9.4 (L) x 7.9 (W) x 2.9 (H) inches          Weight: 4.85 LBS (net) / 7.7 LBS (gross)</p>
<b>MAINBOARD AND CHIPSET</b>	<p>Mainboard in Mini-MTX form factor          Chipset: Intel® H610          Supports hardware monitoring and watch dog functionality          All capacitors are high quality solid capacitors</p>
<b>BIOS</b>	<p>AMI BIOS in 32MB EEPROM          Supports Unified Extensible Firmware Interface (UEFI)</p> <p>Supports power on after power failure [1]*          Supports firmware TPM v2.0 (fTPM)</p>
<b>POWER SUPPLY</b>	<p>External 120W power adapter (fanless)          AC input voltage: 100 - 240V AC, 50 - 60 Hz          Output: 19V DC 6.32A, 120W max wattage, DC connector: 5.5/2.5 mm (outer/inner diameter)          DC-input supports an external power source with either 12V±5% or 19V±5%          AC connector with protective earth contacts, cable length 5.9 feet</p>
<b>OPERATING SYSTEM</b>	<p>The system comes without an operating system installed.          Compatibility: Windows 10/11 and Linux 64bit</p>
<b>PROCESSOR SUPPORT</b>	<p>LGA 1700 Socket supports Intel® Core® i3/i5/i7/i9, Pentium Gold, and Celeron processors          Supports the 12th generation Intel Core processors, codename "Alder Lake-S"          Max supported processor power consumption (TDP): 65W          14nm process technology, supports processors with integrated graphics only [5]*</p> <p>The unlock function for Intel® K-Series processors is not supported with this model          The processor integrates PCI-Express, the memory controller, and graphics engine          (Performance features depend on the processor type)          Please refer to the support list for more detailed processor information at <a href="http://global.shuttle.com">global.shuttle.com</a></p>
<b>SYSTEM COOLING</b>	<p>Processor cooling with heatpipe technology, two 60 mm fans</p>
<b>MEMORY SUPPORT</b>	<p>2 x 260 pin SODIMM slots          Supports DDR4 2133/2400/2666/2933/3200 MHz (PC4-25600/23466/21300/19200/17000) SDRAM at 1.2V          Supports Dual Channel mode          Supports a max. of 32GB per DIMM, up to 64GB total          Supports two unbuffered DIMM modules (no ECC or registered)</p>
<b>DRIVE BAYS</b>	<p>Supports one slimline 5.25" optical drive (ODD) with max 12.7 mm height (can also be used for a 2.5" drive)          2.5" HDD/SSD drive with max 12.5 mm height, accessible from the upper bay          2.5" HDD/SSD drive with max 9.5 mm height, accessible from the lower bay</p> <p>System includes a pre-installed data/power cable [6]*          Connector supports SATA III with max. 6 GB/s, optional PHD4 accessory allows for installation of 3.5" HDD [8]*          System is ready for 1 x 2.5" HDD/SSD and one optical drive (ODD). For further 2.5" drives, additional SATA cables are required. For a third 2.5" drive, four M3x4 screws are required</p>
<b>M.2 SLOTS</b>	<p>M.2 2280M slot:          PCI-Express Gen 3.0 X4          SATA v3.0 (6 GB/s) interface          Supports M.2 SSDs with a max width of 22 mm and length of 42/60/80 mm (type 2242, 2260, 2280) and M.2 SSDs with SATA or PCIe interface</p> <p>M.2 2230E slot:          PCI-Express v2.0 X1, USB 2.0          Supports M.2 cards with a max width of 22 mm and length of 30 mm (type 2230)          Supports WLAN expansion cards, optional Shuttle accessory: WLN-M/WLN-M1 [4]*</p>

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<p><b>INTEGRATED GRAPHICS</b></p>	<p>Intel Ultra HD graphics function features depend on the processor type used [5]*</p> <p>This model has three video outputs:                      -1 x HDMI v2.0b (1080p/60 and 2160p/60 supported)                      -1 x DisplayPort 1.4a (1080p/60 and 2160p/60 supported)                      -1 x Analog D-sub VGA (15-pin, 1080p/60 supported)</p> <p>Supports three independent displays with the integrated graphics                      Hardware video decoding/encoding: H.264, H.265 (8/10 bit, encoding via QuickSync), VP9 (only 10 bit VP9 can be decoded)</p>	
<p><b>AUDIO</b></p>	<p>Audio with Realtek ALC662/888/897 codec                      Two analog audio connectors (3.5 mm) on the front                      (1) Microphone input                      (2) Headphones out (line out)</p>	
<p><b>GIGABIT LAN CONTROLLER</b></p>	<p>Intel 225 + 219LM, Dual LAN ports w/ LEDs (yellow: data transfer active, green: off at 10 MB/s, lights up at 10 MB/s or higher)                      Supports 10/100/1000 MB/s operation (219LM), 100/1000/2500 MB/s (225)                      Supports Wake-on-LAN                      Supports network boot by Preboot eXecution environment (PXE)</p>	
<p><b>FRONT PANEL CONNECTORS</b></p>	<p>Microphone input                      Headphone output (line-out)                      2 x USB 3.2 Gen 1                      2 x USB 2.0</p>	<p>Power button                      Power indicator (Blue LED)                      Hard disk drive indicator (Yellow LED)</p>
<p><b>BACK PANEL CONNECTORS</b></p>	<p>1 x HDMI v2.0b (digital audio/video)                      1 x DisplayPort v1.4a (digital audio/video) [2]*                      1 x Analog VGA / D-sub video output (15-pin)                      2 x USB 3.2 Gen 1                      2 x USB 2.0                      1 x Kensington Lock</p>	<p>2 x RJ45 LAN (1 GB/s and 2.5 GB/s)                      2 x WLAN antenna holes                      1 x DC input connector for external power adapter (19V input)                      1 x 4 pin connector (for external power or Clear CMOS function; 5V DC voltage for external components)</p>
<p><b>OTHER CONNECTORS (ONBOARD)</b></p>	<p>USB 2.0 connector (4 pin, internal USB)                      4 x RS232 COM port (2x5 pin, 2 mm pitch)                      SATA power connectors 5V (4-pin)/12V (3-pin)</p>	<p>Fan connectors x 2 (4 pin), one occupied by cooling system                      Front connectors for power button, LEDs, USBs, audio ports                      Power on after power failure (hardware solution by jumper) [1]*</p>
<p><b>INCLUDED ACCESSORIES</b></p>	<p>XPC installation guide                      Driver DVD                      SATA and power cables (for one 2.5" drive and one slimline drive)</p>	<p>Screw packs for M.2 expansion and drives                      Power adapter (with protective earth contacts)                      Protector cap for CPU socket (do not use if heatpipe or fan is mounted)</p>
<p><b>OPTIONAL ACCESSORIES</b></p>	<p>Vertical stand (PS01)                      WLN-M (802.11ac, Wi-Fi 5) or WLN-M1 (80.211ax, Wi-Fi 6), WLAN module [4]*</p>	<p>Adapter cable for external power button (CXP01)                      Adapter for three COM ports (PCM31) [3]*                      3.5" Hard Disk rack (PHD4) [8]*</p>
<p><b>ENVIRONMENTAL CRITERIA</b></p>	<p>Operating temperature: 0 - 50°C [7]*      Humidity: 10 - 90% (non-condensing)</p>	
<p><b>CERTIFICATIONS</b></p>	<p>EMI: CE, UKCA, FCC, BSMI, RCM, VCCI      Other: RoHS, Energy Star, ErP                      Safety: CB 60950/62368, cTUVus, BSMI</p> <p>This model is classed as a technical information equipment (ITE) in class B and is intended for use in living rooms and offices. The CE mark approves conformity by the EU directives:                      (1) 2004/108/EC relating to electromagnetic compatibility (EMC)                      (2) 2006/95/EC relating to Electrical Equipment designed for use within certain voltage limits (LVD)                      (3) 2009/125/EC relating to eco-design requirements for energy related products (ErP)</p>	

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### [1] POWER ON AFTER POWER FAILURE

The BIOS setup provides a power on after power fail function that can be found under “Power Management Configuration”. The function determines the PC’s behavior after power failure: (1) unconditional power on, (2) restore former status, or (3) keep system turned off. The function may fail after short power failures, but the PC comes with a hardware based solution. By removing the appropriate jumper JP4, the system will start unconditionally once power is supplied.

### [2] CONVERTING DISPLAYPORT INTO HDMI/DVI

The DisplayPort output supports Dual-mode (DP++) and can be converted to HDMI or DVI by an additional, passive adapter cable. The integrated graphics automatically detects the connected display and puts out the appropriate electric signal—either DisplayPort (without an adapter) or HDMI/DVI (with an adapter). HDMI/DVI monitors are only operated in single-link mode ie max 1920x1200 with 60 Hz. A monitor with a DisplayPort connector cannot be connected to the HDMI port with a simple, passive adapter.

### [3] OPTIONAL COM PORT ACCESSORY PCM31

The accessory provides three additional COM ports to the front panel. The upper bay cannot be used for an optical drive if this accessory is used.

### [4] OPTIONAL WIRELESS LAN MODULE

This PC can be optionally upgraded with WLAN/Bluetooth functionality using an accessory kit. Our WLN-M and WLN-M1 kits consist of a WLAN card in M.2 2230 format and two external antennas with antenna cables.

### [5] INTEL PROCESSORS WITHOUT GRAPHICS

Intel processors without integrated graphics (with model name ending with “F”, for example Core i7-12700F) are not compatible.

### [6] 12V POWER CONNECTOR FOR SATA DRIVES

The supplied power cables for SATA drives provide a voltage of 5V. Only in very exceptional cases, a 2.5" hard disk also requires a 12V line, which is not supported out of the box (only via an optional adapter, included by PHD4 accessory).

### [7] HIGH AMBIENT TEMPERATURE

For high ambient temperature over 40°C, SSDs are strongly recommended instead of hard disk drives.

### [8] OPTIONAL ACCESSORY PHD4

The accessory allows for the installation of one 3.5" hard drive. No other drives such as a slimline DVD drive or 2.5" HDD/SDD can be used if this accessory is installed.

**BIOS DOWNLOADS:** <https://global.shuttle.com/products/productsDownload?productId=2651>

**SUPPORT LIST:** <https://global.shuttle.com/products/productsSupportList?productId=2651>

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

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

# XH610

SLIM PC

## Front View



- |                              |                                     |
|------------------------------|-------------------------------------|
| 1 5.25" bay for slimline ODD | 5 Headphone output                  |
| 2 USB 2.0 port x 2           | 6 USB 3.2 Gen 1 Type-C              |
| 3 USB 3.2 Gen 1 Type-A       | 7 Power on button with LED          |
| 4 Microphone input           | 8 LED indicator for hard disk drive |

## Back View



- |   |                           |
|---|---------------------------|
| A Thumbscrew x 2  | J Gigabit LAN port (RJ45) |
| B Perforation for optional WLAN antenna                 | K 2.5G LAN port (RJ45)    |
| C Kensington Lock                                       | L USB 3.2 Gen 1 port x 2  |
| D DC-in connector for power adapter                     | M USB 2.0 port x 2        |
| E DisplayPort 1.4a                                      | N Audio Line-in           |
| F HDMI 2.0b port  | O Audio Line-out          |
| G D-sub VGA port  | P MIC input               |
| H RS232/RS422/RS485 COM port                            | Q RS232 COM port          |
| I 4-pin connector for external power button, Clear CMOS |                           |

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# XH610

SLIM PC



## SUPPORTS INTEL® 12TH GENERATION PROCESSORS

Equipped with a LGA1700 socket, the XH610 supports 12th Gen Intel® Celeron®, Pentium®, and Core™ i3/i5/i7/i9 65W processors. The series is integrated with ultra HD graphics and supports up to 64GB (32GB x 2) of DDR4-3200 memory.



## SUPPORTS TRIPLE DISPLAY

With one HDMI 2.0b, one DisplayPort, and one VGA output built-in, the XH610 series supports three independent displays, providing dynamic visualization for multitasking and digital signage applications.



## M.2

## M.2 EXPANSION SLOTS

With native a M.2 2280/2260/2242 Type M and M.2 2230 Type E slot, the XH610 series offers faster storage performance and expansion capacity for M.2 SSD and Wi-Fi modules.

\*M.2 M key supports SATA and PCIe 3.0 x4 storage interfaces



## FLEXIBLE STORAGE EXPANSION

The series supports installing two 2.5" HDD/SSD and a slim ODD or three 2.5" HDD/SSD storage drives. Installation of a 3.5" HDD for increased storage is possible with an optional PHD4 accessory.\*

\*If an ODD is installed, three HDD/SSD or 3.5" HDD cannot be used. If PHD4 accessory is installed, a slimline DVD drive or 2.5" HDD/SDD cannot be used.



## UP TO 5 COM PORTS

The XH610 series provides one RS232 and one RS232/422/485 with support for 0V/5V/12V. If equipped with the optional accessory PCM31, three additional RS232 can be added\*

\*If the accessory is installed, the upper bay cannot be used for an optical drive



## SMART FAN

## EXCLUSIVE COOLING TECHNOLOGY

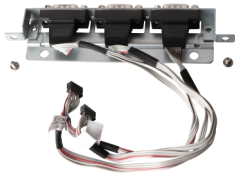
XH610 series features Shuttle's heat-pipe cooling system with a smart fan design. The ventilation design allows for constant air circulation between the inside and outside of the machine for high stability and low noise for long-term operation.

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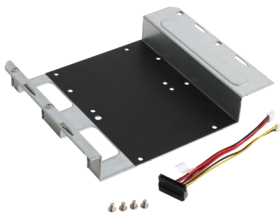
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<b>ACCESSORY</b>	<b>PCM31</b>
<b>DESCRIPTION</b>	The PCM31 accessory provides three additional RS232 to the front panel to support a max of five serial ports
<b>REMARKS</b>	If the accessory is installed in the upper bay, an optical drive (ODD) cannot be used.



<b>ACCESSORY</b>	<b>PHD4</b>
<b>DESCRIPTION</b>	This accessory allows for the installation of one 3.5" hard drive. Installing the rack will take the space needed for a slimline DVD drive or 2.5" HDD/SSD.
<b>REMARKS</b>	HDD in XPC slim PCs should only be used in ambient temperatures up to 40 °C. For higher temperatures, SSDs are recommended.



<b>ACCESSORY</b>	<b>PS01</b>
<b>DESCRIPTION</b>	The PS01 stand is required for stability when placing the slim PC for vertical orientation
<b>COMPATIBILITY</b>	XG41, XH61, XH61V, XH81V, XH97V, XH110, XH110V, XH110G, XH170V, XH270, XH310, XH310V, XH410G, XH510G, XH610, XH610V, XC60J



<b>ACCESSORY</b>	<b>WLN-M</b>
<b>DESCRIPTION</b>	The WLN-M wireless LAN kit can be used to equip XPC cube and slim series models with the wireless LAN standard 802.11 ac/b/g/n at 2.4/5 GHz. The combo device supports Bluetooth 4.0.
<b>REMARKS</b>	M.2 2230 (NGFF) WLAN card, Antenna cable (XPC slim) x 2, Antenna cable (XPC cube) x 2, Dipole antenna x 2, Quick Guide
<b>OS SUPPORT</b>	Windows 7, Windows 8.1, Windows 10, Linux (32/64 bit)



<b>ACCESSORY</b>	<b>WLN-M1</b>
<b>DESCRIPTION</b>	The WLN-M1 wireless LAN kit can be used to equip XPC cube and slim series models with the wireless LAN standard 802.11 ac/ax/b/g/n at 2.4/5 GHz. The combo device supports Bluetooth 5.2.
<b>REMARKS</b>	M.2 2230 (NGFF) WLAN card: Intel Wireless-6, Antenna cable (XPC slim) x 2, Antenna cable (XPC cube) x 2, Dipole antenna x 2, Quick Guide
<b>OS SUPPORT</b>	Windows 10, Windows 11, Linux (64 bit)

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# XH310R vs XH610

SLIM PC



MODEL	XH310R/XH310RV	XH610
CHIPSET	Intel H310	Intel H610
PROCESSOR SUPPORT	LGA 1151v2, max TDP 65W 14nm++ Coffee Lake Refresh (8th/9th Gen Core CPU) Intel® Core™ i3/i5/i7/i9, Pentium, Celeron	LGA 1700, max TDP 65W 14nm Alder Lake-S (12th Gen Core CPU) Intel® Core™ i3/i5/i7/i9, Pentium Gold, Celeron
MEMORY	2 x 16GB DDR4 2400/2666 MHz (32GB max)	2 x 32GB DDR4 2133/2400/2666/2933/3200 MHz (64GB max)
VIDEO OUTPUT	HDMI + DisplayPort 1.2 + D-sub VGA Supports triple displays Supports 4K Ultra HD, DirectX 12	HDMI 2.0b + DisplayPort 1.4a + D-sub VGA Supports triple displays Supports 4K Ultra HD
AUDIO	Realtek AL662, 5.1 channel HD audio	Realtek AL662/ALC897/ALC888S, 5.1 channel HD audio
ETHERNET	Intel i211 x 2 10/100/1000 MB/s operation Supports Wake on LAN function	Intel 225 + 219LM 10/100/1000 MB/s (Intel 225), 100/1000/2500 (Intel 219LM) Supports Wake on LAN function
SATA ONBOARD	SATA III 6 Gb/s	SATA III 6 GB/s
FRONT PANEL	Power button with LED, HDD LED, MIC-in, Headphone out, USB 3.1 Gen 1 x 2, USB 2.0 x 2	Power button with LED, HDD LED, MIC-in, Headphone out, USB 3.2 Gen 1 x 2, USB 2.0 x 2
BACK PANEL	HDMI 2.0a, DisplayPort 1.2, D-sub VGA USB 3.1 Gen 1 x 2, USB 2.0 x 2 Gigabit LAN (Intel i211) x 2 Audio x 3, Clear CMOS button	HDMI 2.0b, DisplayPort 1.4a, D-sub VGA USB 3.2 Gen 1 x 2, USB 2.0 x 2 RJ45 LAN x 2 (1 GB/s and 2.5 GB/s) Audio x 3, Clear CMOS button
DRIVE BAYS	(2) 2.5" HDD/SSD bay* (1) slimline ODD bay*	(2) 2.5" HDD/SSD bay* (1) slimline ODD bay*
OPTIONAL ACCESSORIES	Adapter cable (CXP01) RS232 COM ports x 3 (PCM31) 3.5" HDD rack (PHD4) Vertical Stand (PS01) VESA mount (PV02) WLAN kit (WLN-M)	Adapter cable (CXP01) RS232 COM ports x 3 (PCM31) 3.5" HDD rack (PHD4) Vertical Stand (PS01) VESA mount (PV02) WLAN kit (WLN-M/WLN-M1)
EXPANSION SLOT	M.2 2280 M slot, Supports M.2 SSDs M.2 2230 E slot, Supports optional WLAN	M.2 2280 M slot, Supports M.2 SSDs M.2 2230 E slot, Supports optional WLAN
OS SUPPORT	Windows 10, Linux 64 bit	Windows 10/11, Linux 64 bit

\*Supports one HDD/SSD with max height of 9.5mm (lower bay) and 12.5mm (upper bay), an additional 2.5" drive can also be installed in the ODD bay

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# XH610

## SLIM PC

12th Generation Intel Core Desktop Processors (LGA 1700 10 nm Alder Lake S)  
Processors with a TDP > 65W or have an F suffix are not supported (marked in red)

Name	Model	Cores/Threads	CPU Clock/Turbo	E-Cores	E-Cores Clock/Turbo	Smart Cache	Base TDP	Memory	Graphics (Max Clock)
Core i9	12900K	8/16	3.2 - 5.1 GHz	8	2.4 - 3.9 GHz	30 MB	125W	DDR4-3200	UHD 770 (1.55 GHz)
	12900KF	8/16	3.2 - 5.1 GHz	8	2.4 - 3.9 GHz	30 MB	125W	DDR4-3200	None
	12900	8/16	2.4 - 5.0 GHz	8	1.8 - 3.8 GHz	30 MB	65W	DDR4-3200	UHD 770 (1.55 GHz)
	12900F	8/16	2.4 - 5.0 GHz	8	1.8 - 3.8 GHz	30 MB	65W	DDR4-3200	None
	12900T	8/16	1.4 - 4.8 GHz	8	1.0 - 3.6 GHz	30 MB	35W	DDR4-3200	UHD 770 (1.55 GHz)
Core i7	12700K	8/16	3.6 - 4.9 GHz	4	2.7 - 3.8 GHz	25 MB	125W	DDR4-3200	UHD 770 (1.5 GHz)
	12700KF	8/16	3.6 - 4.9 GHz	4	2.7 - 3.8 GHz	25 MB	125W	DDR4-3200	None
	12700	8/16	2.1 - 4.9 GHz	4	1.6 - 3.6 GHz	25 MB	65W	DDR4-3200	UHD 770 (1.5 GHz)
	12700F	8/16	2.1 - 4.9 GHz	4	1.6 - 3.6 GHz	25 MB	65W	DDR4-3200	None
	12700T	8/16	1.4 - 4.6 GHz	4	1.0 - 3.4 GHz	25 MB	35W	DDR4-3200	UHD 770 (1.5 GHz)
Core i5	12600K	6/12	3.7 - 4.9 GHz	4	2.8 - 3.6 GHz	20 MB	125W	DDR4-3200	UHD 770 (1.45 GHz)
	12600KF	6/12	3.7 - 4.9 GHz	4	2.8 - 3.6 GHz	20 MB	125W	DDR4-3200	None
	12600	6/12	3.3 - 4.8 GHz	-	-	18 MB	65W	DDR4-3200	UHD 770 (1.45 GHz)
	12600T	6/12	2.1 - 4.6 GHz	-	-	18 MB	35W	DDR4-3200	UHD 770 (1.45 GHz)
	12500	6/12	3.0 - 4.6 GHz	-	-	18 MB	65W	DDR4-3200	UHD 770 (1.45 GHz)
	12500T	6/12	2.0 - 4.4 GHz	-	-	18 MB	35W	DDR4-3200	UHD 770 (1.45 GHz)
	12400	6/12	2.5 - 4.4 GHz	-	-	18 MB	65W	DDR4-3200	UHD 730 (1.45 GHz)
	12400F	6/12	2.5 - 4.4 GHz	-	-	18 MB	65W	DDR4-3200	None
	12400T	6/12	1.8 - 4.2 GHz	-	-	18 MB	35W	DDR4-3200	UHD 730 (1.45 GHz)
Core i3	12300	4/8	3.5 - 4.4 GHz	-	-	12 MB	60W	DDR4-3200	UHD 730 (1.45 GHz)
	12300T	4/8	2.3 - 4.2 GHz	-	-	12 MB	35W	DDR4-3200	UHD 730 (1.45 GHz)
	12100	4/8	3.3 - 4.3 GHz	-	-	12 MB	60W	DDR4-3200	UHD 730 (1.45 GHz)
	12100F	4/8	3.3 - 4.3 GHz	-	-	12 MB	58W	DDR4-3200	None
	12100T	4/8	2.2 - 4.1 GHz	-	-	12 MB	35W	DDR4-3200	UHD 730 (1.4 GHz)
Pentium Gold	G7400	2/4	3.7 GHz	-	-	6 MB	46W	DDR4-3200	UHD 710 (1.35 GHz)
	G7400T	2/4	3.1 GHz	-	-	6 MB	35W	DDR4-3200	UHD 710 (1.35 GHz)
Celeron	G6900	2/2	3.4 GHz	-	-	4 MB	46W	DDR4-3200	UHD 710 (1.3 GHz)
	G6900T	2/2	2.8 GHz	-	-	4 MB	35W	DDR4-3200	UHD 710 (1.3GHz)

K = unlocked, T = power optimized, F = without integrated graphics (requires graphic card), TDP = Thermal Design Power (max. power consumption).

The XH610 does not support the unlock function of Intel K-series processors. See more support information at [global.shuttle.com](https://global.shuttle.com)

For more information on all products, please contact us at [sales@us.shuttle.com](mailto:sales@us.shuttle.com) or 626.820.9000

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