DH110SE

SLIM PC

PROCESSOR	Supports Intel® 6th and 7th generation Core® i3/i5/i7 series, Pentium, and Celeron® LGA 1151 65W processors
MEMORY	2 x 260 pin DDR4 2133 MHz SODIMM slots, Supports dual channel up to 32GB (16GB x 2)
VIDEO GRAPHICS	Intel HD Graphics
VIDEO OUTPUT	HDMI + DisplayPort, Supports dual independent displays, Supports 4K Ultra HD
AUDIO	Realtek ALC662, 5.1 channel HD audio
ETHERNET	Realtek 8111G Supports Wake on LAN function 10/100/1000 MB/s operation
STORAGE INTERFACE	SATA 6 GB/s
ONBOARD CONNECTORS	(1) 4 pin fan connector (1) jumper for power on after power fail (hardware solution) **[3]*** (1) connector for CMOS battery
FRONT PANEL	(1) Power Button (2) USB 3.0 (1) Power LED (1) External microphone jack 1/8" (1) HDD LED (1) External headphone jack 1/8" (2) USB 2.0 (1) SD Card Reader
BACK PANEL	(1) HDMI (1) Clear CMOS button (1) DisplayPort (2) Wireless Antenna holes (4) USB 2.0 (2) Kensington Lock (1) Gigabit LAN ports (1) DC-in
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 90W power supply Output: 19V 4.47A DC
ACCESSORIES	Quick Guide Driver DVD Screw package VESA mount (optional) SATA cable 802.11 b/g/n WLAN module (optional) Power cord Vertical stand (optional)
EXPANSION SLOT	(1) M2. MAX to 2260 Type M (1) M.2 MAX to 2230 Type AE key socket
OS SUPPORT	Windows 7, Windows 8.1, Windows 10, Linux

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CHASSIS	Black slim type metal chassis Kensington lock slot on the back as part of anti-theft system Dimensions: 7.5 (L) x 6.5 (W) x 1.7 (H) inches Weight: 2.8 LBS (net) / 4.6 LBS (gross)
MAINBOARD AND CHIPSET	Shuttle mainboard H110, Platform Controller Hub (PCH) as Single-Chip-Solution Chipset: Intel® H110 (Codename: Sunrise Point) 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, 8 MB EEPROM with SPI interface Supports Unified Extensible Firmware Interface (UEFI) Supports power on after power failure [3]*
POWER SUPPLY	External 90W power adapter (fanless) AC input voltage: 100 - 240V, 50 - 60 Hz Output: 19V DC 4.74A
OPERATING SYSTEM	The system comes without an operating system installed. Compatibility: Windows 7, Windows 8.1, Windows 10, Linux 64bit Windows 7 and 8.1 is only supported in combination with 6th generation Intel® Core® processors [6]*
PROCESSOR SUPPORT	LGA 1151 (H4) Socket supports Intel® Core® i3/i5/i7, Pentium, and Celeron processors -6th generation (Skylake) -7th generation (Kabylake) [6]* Max supported processor power consumption (TDP): 65W 14nm process technology, up to 8MB of L3 cache Not compatible with Intel® Xeon E3 V5 processors for processors with LGA 1150 and LGA 1151 sockets 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 on the same die (performance features depend on the processor type) Please refer to the support list for more detailed processor information at global.shuttle.com
SYSTEM COOLING	Shuttle I.C.E. (Integrated Cooling Engine) advanced heatpipe cooling technology, two 60 mm fans
MEMORY SUPPORT	2 x 260 pin SODIMM slots Supports DDR4 2133 MHz memory (PC4-17000) at 1.2V Supports Dual Channel mode Supports a max. of 16GB per DIMM, up to 32GB total Supports two unbuffered DIMM modules (no ECC)
DRIVE BAYS	1 x 2.5" drive bay supports one hard disk or SSD drive, max height 12.5 mm
M.2 SLOTS	The M.2 2260 M slot supports M.2 SSD cards with a SATA interface and a width of 22 mm and a length of 42 or 60 mm (type 2242/2260). Cards with 80 mm length (type 2280) are not supported. M.2 2230 AE 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. This slot is intended for Wireless LAN (WiFi), Bluetooth, GSM/UMTS cards and others. A SATA interface for SSD cards is not available.
AUDIO	Realtek® ALC 662 5.1 channel 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)
GIGABIT LAN CONTROLLER	Realtek 8111G Ethernet network controller Supports 10/100/1000 MB/s operation Supports Wake-ON-LAN Supports network boot by Preboot eXecution Environment (PXE)
SATA CONNECTORS	The mainboard provides one Serial-ATA interface, max 6GB/s supported Serial-ATA power connector (onboard)

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INTEGRATED GRAPHICS	Intel HD graphics function features depend on the processor type used This model has two video outputs: DisplayPort 1.2 and HDMI 1.4 Supports two independent Full HD displays simultaneously [3]* Supports Full HD resolution (1920x1200), 1080p/60Hz Supports 4K UHD resolution (3840x2160), max 2160p/60Hz on DisplayPort or max 30Hz on HDMI [4]* Supports Blu-Ray playback with HDCP content protection Supports HD video plus multi-channel digital audio via a single cable	
MULTI-CHANNEL AUDIO	Realtek ALC662 codec with 5.1 channel HD audio Front: MIC in, Headphones in Digital multi-channel audio via HDMI and DisplayPort outputs	
CARD READER	Integrated card reader supports SD, SDHC, SDXC memory flash cards Supports boot up from SD card	
FRONT PANEL CONNECTORS	Microphone input Headphone output (line-out) 2 x USB 3.0 2 x USB 2.0	Power button Power indicator (Blue LED) Hard disk drive indicator (Yellow LED) SD Card Reader
BACK PANEL CONNECTORS	HDMI v1.4 [1]* DisplayPort 1.2 [2]* USB 3.0 x 4 Kensington Lock x 2	Clear CMOS button Gigabit LAN (RJ45) x 1 WLAN antenna holes x 2 DC-input connector for external power adapter
OTHER CONNECTORS (ONBOARD)	Connector for CMOS battery Fan connectors x 1 (4 pin)	Power on after power failure (hardware solution by jumper) [3]*
INCLUDED ACCESSORIES	XPC installation guide Driver DVD SATA and power cables Heatsink compound	External 90W power adapter with cord Protector cap for CPU socket (don't use if heatpipe/fan is mounted) Screw pack
OPTIONAL ACCESSORIES	Vertical stand (PS02) WLN-M (WLAN module)	VESA mount (PV04)
ENVIRONMENTAL CRITERIA	Operating temperature: 0 - 50°C [5]*	Humidity: 10 - 90% (non-condensing)
CERTIFICATIONS	EMI: FCC, CE, BSMI, C-Tick Safety: ETL, CB, BSMI	Other: RoHS, Energy Star 5.0, 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)	

DH110SE

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, for example:
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] 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 DH110SE 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.

[4] 4K ULTRA HD RESOLUTION

A 4K display with Ultra HD resolution (3840 x 2160) should be connected via DisplayPort (this port only supports a higher refresh rate of 60 Hz). There are certain displays will require a MST (Multi-Stream Transport) mode to be enabled, which sends two separate images at half resolution each to the display. The two images are then combined and put in the correct order by the Intel graphics driver when in Collage mode. HBR2 mode (High Bit Rate 2) must be supported by each display to have two of them run at 4K resolution. The video playback performance depends on the video format, bit rate, and processor used. For HBR2 mode (High Bit Rate 2), it must be supported by each display to have more than one of them run at 4K resolution.

[5] 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.

[6] KABYLAKE PROCESSOR SUPPORT

7th generation Intel Core processors are supported from BIOS version DH110100.200. Download website: http://global.shuttle.com/support/download. If a Kabylake processor is used, the DH110SE will only support Windows 10 and Linux operating systems.

BIOS DOWNLOADS: http://global.shuttle.com/products/productsDownload?productId=2091
SUPPORT LIST: http://global.shuttle.com/products/productsSupportList?productId=2091
FAQ LIST: http://global.shuttle.com/support/faq
PRODUCT WARRANTY: https://us.shuttle.com/barebone-support/policy-xpc-barebone/

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DH110SE

SLIM PC

Front View

1	Microphone input	5	Power Button
2	Headphone input	6	SD Card Reader
3	Power LED	7	USB 3.0 x 2
4	Hard Disk LED	8	USB 2.0 x 2

Back View
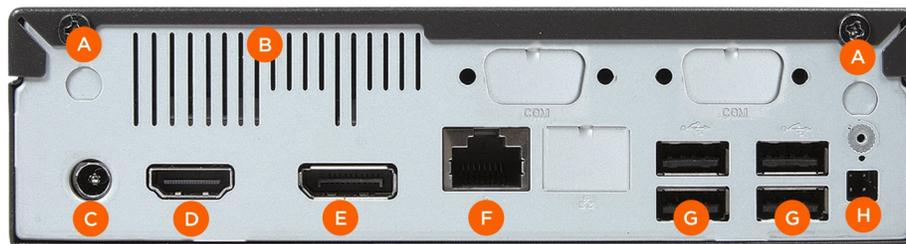
A	WLAN antenna hole x 2	E	DisplayPort video output
B	Ventilation grille	F	Gigabit LAN (RJ45)
C	DC power input	G	USB 2.0 x 4
D	HDMI video output	H	Clear CMOS connector

Kensington lock hole on left and right side

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DH110SE

SLIM PC

SUPPORTS INTEL® 6TH AND 7TH GENERATION PROCESSORS

Equipped with a LGA 1151 socket, the DH110SE supports both Intel® 6th Generation (Sky Lake) and Intel® 7th Generation (Kaby Lake) Core i3/i5/i7, Pentium®, and Celeron® 65W processors. Compared to the previous Haswell/Haswell refresh processors, CPU and GPU performance is significantly increased and saves more power.

VESA MOUNTABLE

The supplied 75/100mm VESA mount allows for installation of the DH110SE on walls or monitors, for use in company buildings, public institutions, or other industry buildings. With a thickness of 43mm, it allows for versatile integration into hardware systems and well suited for areas with limited space.

EXPANSION SLOTS

One M.2 2260 Type M and one M.2 2230 Type AE slot are built-in for a M.2 SSD, a Wi-Fi card, or other compatible devices. M.2 cards with a width of 22 mm and length of 42/60 mm are supported. The M.2 2230 slot can be used for a WLAN module, Bluetooth, GSM/UMTS card, or other cards.

IDEAL FOR MULTIPLE APPLICATIONS

With support for 4K/Ultra HD playback, multiple USB 2.0 and 3.0 ports, as well as being VESA mountable, the DH110SE is ideal for digital signage, office, and multimedia applications.

SMART FAN DESIGN

A heat-pipe cooling system with smart fan design can be set in the BIOS for faster fan speed automatically when CPU temperature increases for high stability and low noise during long term operation.

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DH110SE

SLIM PC

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

ACCESSORY	PV04
DESCRIPTION	The PV04 (VESA 75/100 mm) can be attached to a wall, monitor, or TV with a VESA standard mounting hole pattern. The PC affixes securely in the metal mount with the screw fittings included.
ITEMS INCLUDED	VESA mount x 1, Thumbscrews x 4 (screws mount to PC), Screws x 4 (screws mount to external device), Quick Guide
REMARKS	Supports 75 and 100 mm VESA standards

ACCESSORY	WLN-M
DESCRIPTION	The WLN-M wireless LAN kit can be used to equip XPC cube and slim series models with the wireless LAN standard 802.11 n/ac at 2.4/5 GHz. The combo device supports Bluetooth 4.0.
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, Driver DVD
OS SUPPORT	Windows 7, Windows 8.1, Windows 10, Linux (32/64 bit)

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DH110 vs DH110SE

SLIM PC

MODEL	DH110	DH110SE
CHIPSET	Intel H110	Intel H110
PROCESSOR SUPPORT	LGA 1151, max TDP 65W 14nm Skylake (6th Gen Core CPU) 14nm Kabylake (7th Gen Core CPU) Intel® Core™ i3/i5/i7, Pentium, Celeron	LGA 1151, max TDP 65W 14nm Skylake (6th Gen Core CPU) 14nm Kabylake (7th Gen Core CPU) Intel® Core™ i3/i5/i7, Pentium, Celeron
MEMORY	2 x 16GB DDR3L 1333/1600 MHz max	2 x 16GB DDR4 2133 MHz max
VIDEO OUTPUT	HDMI + DisplayPort, Supports dual displays, Supports 4K Ultra HD	HDMI + DisplayPort, Supports dual displays, Supports 4K Ultra HD
AUDIO	Realtek AL662, 5.1 channel HD audio	Realtek AL662, 5.1 channel HD audio
ETHERNET	Intel i211 + i219LM 10/100/1000 MB/s operation Supports Wake on LAN function Supports Teaming mode	Realtek 8111G 10/100/1000 MB/s operation Supports Wake on LAN function Preboot eXecution Environment (PXE) support
SATA ONBOARD	SATA 6G x 1 eSATA x 1	SATA 6G x 1
FRONT PANEL	Power button with LED, HDD LED, MIC-in, Headphone out, SD Card Reader, USB 3.0 x 2, USB 2.0 x 2	Power button with LED, HDD LED, MIC-in, Headphone out, SD Card Reader, USB 3.0 x 2, USB 2.0 x 2
BACK PANEL	HDMI, DisplayPort USB 3.0 x 2 PS/2 combo port Gigabit LAN (Intel i211 + i219LM) x 2 RS232 + RS232/RS422/RS485 WLAN antenna x 2 (optional) Clear CMOS button	HDMI, DisplayPort USB 2.0 x 4 Gigabit LAN x 1 WLAN antenna x 2 (optional) Clear CMOS button
DRIVE BAYS	(1) 2.5" HDD/SSD bay	(1) 2.5" HDD/SSD bay
OPTIONAL ACCESSORIES	Vertical Stand (PS02) VGA adapter (PVG01) WLAN kit (WLN-M)	Vertical Stand (PS02) VESA mount (PV04) WLAN kit (WLN-M)
EXPANSION SLOT	M.2 2260 BM slot M.2 2230 AE slot, Supports optional WLAN	M.2 2260 BM slot M.2 2230 AE slot, Supports optional WLAN
OS SUPPORT	Windows 7, Windows 8.1, Windows 10, Linux 64 bit	Windows 7, Windows 8.1, Windows 10, Linux 64 bit

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DH110SE

SLIM PC

6th Generation Intel Core Desktop Processors (LGA 1151 14 nm Skylake-S)

Processors with a TDP > 65W are not supported (marked in red)

Name	Model	Cores/Threads	CPU Clock	Turbo Clock	Cache	TDP	Graphics	Graphics Clock
Core i7	6700K	4 / 8	4.0 GHz	4.2 GHz	8 MB	91W	HD 530	350 - 1150 MHz
	6700	4 / 8	3.4 GHz	4.0 GHz	8 MB	65W	HD 530	350 - 1150 MHz
	6700T	4 / 8	2.8 GHz	3.6 GHz	8 MB	35W	HD 530	350 - 1100 MHz
Core i5	6600K	4 / 4	3.5 GHz	3.9 GHz	6 MB	91W	HD 530	350 - 1150 MHz
	6600	4 / 4	3.3 GHz	3.9 GHz	6 MB	65W	HD 530	350 - 1150 MHz
	6600T	4 / 4	2.7 GHz	3.5 GHz	6 MB	35W	HD 530	350 - 1100 MHz
	6500	4 / 4	3.2 GHz	3.6 GHz	6 MB	65W	HD 530	350 - 1150 MHz
	6500T	4 / 4	2.5 GHz	3.1 GHz	6 MB	35W	HD 530	350 - 1100 MHz
	6400	4 / 4	2.7 GHz	3.3 GHz	6 MB	65W	HD 530	350 - 1150 MHz
	6400T	4 / 4	2.2 GHz	2.8 GHz	6 MB	35W	HD 530	350 - 1100 MHz
Core i3	6320	2 / 4	3.9 GHz	-	4 MB	65W	HD 530	350 - 1150 MHz
	6300	2 / 4	3.8 GHz	-	4 MB	65W	HD 530	350 - 1150 MHz
	6300T	2 / 4	3.3 GHz	-	4 MB	35W	HD 530	350 - 1100 MHz
	6100	2 / 4	3.7 GHz	-	4 MB	65W	HD 530	350 - 1150 MHz
	6100T	2 / 4	3.2 GHz	-	4 MB	35W	HD 530	350 - 1100 MHz
Pentium	G4520	2 / 2	3.6 GHz	-	3 MB	51W	HD 530	350 - 1150 MHz
	G4500	2 / 2	3.5 GHz	-	3 MB	51W	HD 530	350 - 1150 MHz
	G4500T	2 / 2	3.0 GHz	-	3 MB	35W	HD 530	350 - 1100 MHz
	G4400	2 / 2	3.3 GHz	-	3 MB	51W	HD 530	350 - 1150 MHz
	G4400T	2 / 2	2.9 GHz	-	3 MB	35W	HD 530	350 - 1100 MHz
Celeron	G3920	2 / 2	2.9 GHz	-	2 MB	51W	HD 530	350 - 1050 MHz
	G3900	2 / 2	2.8 GHz	-	2 MB	51W	HD 530	350 - 1050 MHz
	G3900T	2 / 2	2.6 GHz	-	2 MB	35W	HD 530	350 - 950 MHz

K = unlocked, T = power optimized, HT = hyper threading. The DH110SE does not support the unlock function of Intel K-series processors.
See more support information at global.shuttle.com

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DH110SE

SLIM PC

7th Generation Intel Core Desktop Processors (LGA 1151 14 nm Kabylake-S)

Processors with a TDP > 65W are not supported (marked in red)

Name	Model	Cores/Threads	CPU Clock	Turbo Clock	Cache	TDP	Graphics	Graphics Clock
Core i7	7700K	4 / 8	4.2 GHz	4.5 GHz	8 MB	91W	HD 630	350 - 1150 MHz
	7700	4 / 8	3.6 GHz	4.2 GHz	8 MB	65W	HD 630	350 - 1150 MHz
	7700T	4 / 8	2.9 GHz	3.8 GHz	8 MB	35W	HD 630	350 - 1150 MHz
Core i5	7600K	4 / 4	3.8 GHz	4.2 GHz	6 MB	91W	HD 630	350 - 1150 MHz
	7600	4 / 4	3.5 GHz	4.1 GHz	6 MB	65W	HD 630	350 - 1150 MHz
	7600T	4 / 4	2.8 GHz	3.7 GHz	6 MB	35W	HD 630	350 - 1100 MHz
	7500	4 / 4	3.4 GHz	3.8 GHz	6 MB	65W	HD 630	350 - 1100 MHz
	7500T	4 / 4	2.7 GHz	3.3 GHz	6 MB	35W	HD 630	350 - 1100 MHz
	7400	4 / 4	3.0 GHz	3.5 GHz	6 MB	65W	HD 630	350 - 1000 MHz
	7400T	4 / 4	2.4 GHz	3.0 GHz	6 MB	35W	HD 630	350 - 1000 MHz
Core i3	7350K	2 / 4	4.2 GHz	-	4 MB	60W	HD 630	350 - 1050 MHz
	7320	2 / 4	4.1 GHz	-	4 MB	51W	HD 630	350 - 1050 MHz
	7300	2 / 4	4.0 GHz	-	4 MB	51W	HD 630	350 - 1050 MHz
	7300T	2 / 4	3.5 GHz	-	4 MB	35W	HD 630	350 - 1100 MHz
	7101E	2 / 4	3.9 GHz	-	3 MB	54W	HD 610	350 - 1100 MHz
	7101TE	2 / 4	3.4 GHz	-	3 MB	35W	HD 610	350 - 1100 MHz
	7100	2 / 4	3.9 GHz	-	3 MB	51W	HD 630	350 - 1100 MHz
	7100T	2 / 4	3.4 GHz	-	3 MB	35W	HD 630	350 - 1100 MHz
Pentium	G4620	2 / 4	3.7 GHz	-	3 MB	51W	HD 630	350 - 1100 MHz
	G4600	2 / 4	3.6 GHz	-	3 MB	51W	HD 630	350 - 1100 MHz
	G4600T	2 / 4	3.0 GHz	-	3 MB	35W	HD 630	350 - 1050 MHz
	G4560	2 / 4	3.5 GHz	-	3 MB	54W	HD 610	350 - 1050 MHz
	G4560T	2 / 4	2.9 GHz	-	3 MB	35W	HD 610	350 - 1050 MHz
Celeron	G3950	2 / 2	3.0 GHz	-	2 MB	51W	HD 610	350 - 1050 MHz
	G3930	2 / 2	2.9 GHz	-	2 MB	51W	HD 610	350 - 1050 MHz
	G3930T	2 / 2	2.7 GHz	-	2 MB	35W	HD 610	350 - 1000 MHz

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