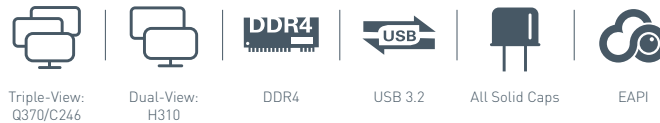
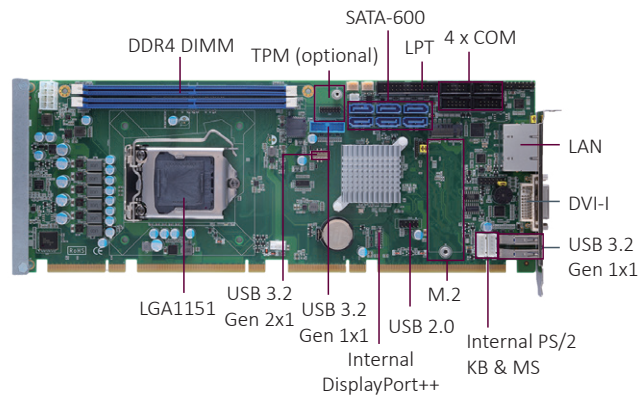


SHB150R

PICMG 1.3 Full-size CPU Card with LGA1151 Socket 9th/8th Gen Intel® Core™ i7/i5/i3, Xeon® E, Pentium® or Celeron® Processor, Intel® C246/Q370/H310, SATA 3.0, USB 3.2 Gen 1/Gen 2, Dual LAN, and DVI-I



Features

- LGA1151 socket 9th/8th Gen Intel® Core™ i7/i5/i3, Xeon® E (Intel® C246), Pentium® or Celeron® processor (up to 95W)
- Intel® C246/Q370/H310 chipset
- 2 DDR4-2666/2400 Long-DIMM for up to 64GB of memory
- Supports Intel® AMT and vPro (Intel® C246/Q370)
- Supports TPM 2.0 (optional)
- Supports M.2 Key M (Intel® C246/Q370)

Specifications

Core System

CPU	LGA1151 9th/8th Gen Intel® Core™ i7/i5/i3, Xeon® E (Intel® C246), Pentium® or Celeron® processor (up to 95W)
System Memory	Intel® C246: 2 x 288-pin 2666/2400 with ECC un-buffered Long-DIMM (Intel® Core™ i7/i5 only supports non-ECC), up to 64GB Intel® Q370/H310: 2 x 288-pin 2666/2400 un-buffered Long-DIMM, up to 64GB
Chipset	Intel® C246/Q370 (with Intel® vPro supported) Intel® H310
BIOS	AMI UEFI BIOS
SSD	M.2 Key M 2280, PCIe x4 signal (Intel® C246/Q370)
Watchdog Timer	225 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 Gen 3 1 x PCIe x4 or 4 x PCIe x1 Gen 3 4 x 32-bit PCI bus masters
Battery	Lithium 3V/220 mA
Power Consumption	Intel® Core™ i7-9700TE with 32GB 2 x DDR4-2666 +12V @ 2.8A, +5V @ 2.4A, +3.3V @ 1.3A

Specifications

Display

Graphic	Intel® HD Graphic
Memory Size	Share system memory
Display Interface	1 x DVI-I 1 x DisplayPort++ (internal header)

I/O

SATA	Intel® C246/Q370: 6 x SATA-600, support RAID 0/1/5/10 Intel® H310: 4 x SATA-600
Hardware Monitoring	Detect CPU/system temperature, voltage, and fan speed
Ethernet	1 x 10/100/1000 Mbps Ethernet with Intel® I219-LM; supports Wake-on-LAN, RPL/PXE Boot ROM, and Intel® AMT 1 x 10/100/1000 Mbps Ethernet with Intel® I210-AT; supports Wake-on-LAN, PXE Boot ROM
Audio	HD Codec audio as MIC-in/Line-in/Line-out/Speaker-out with audio kit AX93242 (optional)
USB	Intel® C246/Q370: 2 x USB 3.2 Gen 2x1, 4 x USB 3.2 Gen 1x1 & 6 x USB 2.0 (2 ports onboard, 4 ports on SHB connector-C golden fingers) Intel® H310: 4 x USB 3.2 Gen 1x1 & 6 x USB 2.0 (2 ports onboard, 4 ports on SHB connector-C golden fingers)
Serial	2 x RS-232 2 x RS-232/422/485, mode selection by SW
PS/2 Combo Port	1 x PS/2 keyboard internal connector 1 x PS/2 mouse internal connector
TPM	TPM 2.0 module (optional)
Others	1 x LPT 1 x smart CPU fan 1 x smart system fan

Mechanical and Environmental

Dimensions	338 x 126 mm
Board Thickness	1.6 mm
Operating Temperature	0°C to +60°C (+32°F to +140°F)
Relative Humidity	10% to 95% relative humidity, non-condensing

Ordering Information

Standard

SHB150RDGG-Q370 (P/N: E38C150106)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® Q370, DVI-I, 2 GbE LAN, and PCIe x4
SHB150RDGG-Q370 (P/N: E38C150107)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® Q370, DVI-I, 2 GbE LAN, and PCIe x1
SHB150RDGG-H310 (P/N: E38C150108)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® H310, DVI-I, 2 GbE LAN, and PCIe x4
SHB150RDGG-H310 (P/N: E38C150109)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® H310, DVI-I, 2 GbE LAN, and PCIe x1
SHB150RDGG-C246 (P/N: E38C150110)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® C246, DVI-I, 2 GbE LAN, and PCIe x4
SHB150RDGG-C246 (P/N: E38C150111)	PICMG 1.3 full-size CPU card with LGA1151 socket, Intel® C246, DVI-I, 2 GbE LAN, and PCIe x1

Optional

5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 mm
5948C122800E	1 x dual USB 3.2 (Gen 1x1) cable with bracket, L=400 mm
59401502800E	1 x dual USB 3.2 (Gen 2x1) cable with bracket, L=400 mm
59380000290E	PS/2 keyboard & mouse cable with bracket
593826A0000E	SATA signal cable/red, L=500 mm
E393242100	AX93242-RC HD audio converter kit
59380402010E	1 x COM port cable with bracket, P=2.54 mm, L=300 mm
59380703000E	2 x COM port cable with bracket, P=2.54 mm, L=300 mm
594826A0010E	DVI-I to DVI-D+VGA Y cable
83935151000E	TPM 2.0 module (AX93515)
E398709102	DisplayPort kit with 15 cm cable

Packing List

Standard

CPU card

59380402010E	COM cable with bracket
594G5208000E	SATA 3.0 cable 180D, 500 mm

Processor List

CPU	Speed	Cache	Cores	TDP
Intel® Core™ i7-9700TE processor	1.8 GHz	12 MB	8	35 W
Intel® Core™ i7-8700K processor	3.7 GHz	12 MB	6	95 W
Intel® Core™ i7-8700 processor	3.2 GHz	12 MB	6	65 W
Intel® Core™ i7-8700T processor	2.4 GHz	12 MB	6	65 W
Intel® Core™ i5-9500E processor	3.0 GHz	9 MB	6	65 W
Intel® Core™ i5-9500TE processor	2.2 GHz	9 MB	6	35 W
Intel® Core™ i5-9400 processor	2.9 GHz	9 MB	6	65 W
Intel® Core™ i5-8400 processor	2.8 GHz	9 MB	6	65 W
Intel® Core™ i5-8500T processor	2.1 GHz	9 MB	6	35 W
Intel® Core™ i3-9100 processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-9100E processor	3.1 GHz	6 MB	4	65 W
Intel® Core™ i3-9100TE processor	2.2 GHz	6 MB	4	35 W
Intel® Core™ i3-8100 processor	3.6 GHz	6 MB	4	65 W
Intel® Core™ i3-8100T processor	3.1 GHz	6 MB	4	35 W
Intel® Xeon® E-2176G processor*	3.7 GHz	12 MB	6	80 W
Intel® Xeon® E-2278GE processor*	3.3 GHz	16 MB	8	80 W
Intel® Pentium® Gold G5400T processor	3.1 GHz	4 MB	2	35 W
Intel® Celeron® G4900T processor	2.9 GHz	2 MB	2	35 W

* C246 use only