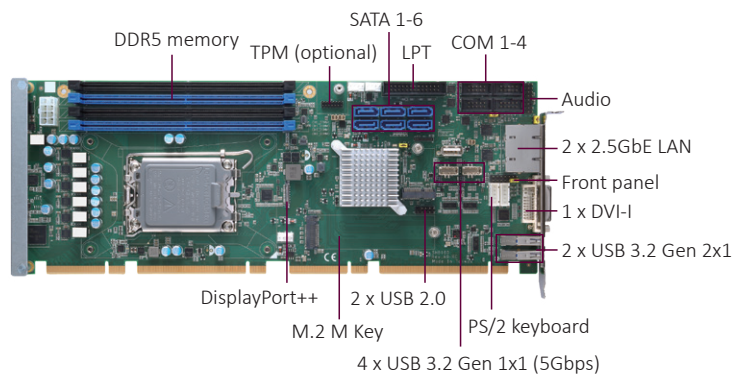


# SHB160 NEW

PICMG 1.3 Full-size CPU Card with LGA1700 14th/13th/12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® Processor, Intel® R680E/H610E, SATA 3.0, M.2 Key E/M, USB 3.2 Gen 1/Gen 2, Dual 2.5GbE LAN, and DVI-I



## Features

- LGA1700 14th/13th/12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor (up to 125W)
- Intel® R680E/H610E chipset
- DDR5-4400 ECC (for R680E)/non-ECC U-DIMM, up to 192GB
- Supports Intel® AMT and vPro (R680E)
- Supports TPM 2.0 (optional)
- Supports dual 2.5GbE LAN
- Supports LPT port
- Supports M.2 Key M and Key E  
\*H610E supports only Key E
- Supports PCIe 4.0 via the gold fingers

## Specifications

### Core System

CPU	LGA1700 14th/13th/12th Gen Intel® Core™ i7/i5/i3, Pentium® or Celeron® processor (up to 125W)
System Memory	4 x DDR5-4400 ECC or non-ECC U-DIMM, up to 192GB (R680E) 2 x DDR5-4400 non-ECC U-DIMM, up to 64GB (H610E) *1DPC 2R up to 4400 MHz *2DPC 1R up to 4000 MHz *2DPC 2R up to 3600 MHz
Chipset	Intel® R680E/H610E
BIOS	AMI UEFI BIOS
SSD	M.2 Key M 2280 with PCIe 4.0 x4 support (R680E only)
Watchdog Timer	225 levels, 1 to 255 sec.
Expansion Interface	1 x PCIe x16 Gen 4 1 x PCIe x4 Gen 4 or 4 x PCIe x1 Gen 4 4 x 32-bit PCI bus master 1 x M.2 Key E 2230

## Specifications

### Core System

Battery	Lithium 3V/220 mAh
Power Consumption	Intel® Core™ i5-12400 with 32GB (4 x DDR5-4400) Power requirements: +12V_CPU @ 5.2A +5V @ 4.64A +3.3V @ 1.76A

### Display

Graphic	Intel® UHD Graphic
Memory Size	Share system memory
Display Interface	1 x DVI-I (colay VGA by project) 1 x DisplayPort (internal header)

### I/O

SATA	6 x SATA-600, supporting RAID 0/1/5/10 (R680E) 4 x SATA-600 (H610E)
Hardware Monitoring	Detect CPU/system temperature, voltage, and fan speed
Ethernet	1 x 10/100/1000/2500 Mbps with Intel® I226-LM, supporting Wake-on-LAN, PXE Boot ROM, TSN, and Intel® AMT with Intel vPro® 1 x 10/100/1000/2500 Mbps with Intel® I226-V, supporting Wake-on-LAN and PXE Boot ROM
Audio	HD Codec audio as Mic-in/Line-in/Line-out/Speaker-out with audio kit AX93242 (optional)
USB	2 x USB 3.2 Gen 2x1 (rear I/O) 4 x USB 3.2 Gen 1x1 (internal box header; H610E supports only 2) 3 x USB 2.0 (2 via internal pin headers, 1 via 180D Type-A connector; 180D Type-A not available on H610E) 4 x USB 2.0 via SHB connector-C golden fingers
Serial	2 x RS-232 2 x RS-232/422/485 with mode selection controlled via software
PS/2 Combo Port	1 x PS/2 keyboard internal connector 1 x PS/2 internal connector
TPM	TPM 2.0 (optional)
Others	1 x LPT 1 x smart CPU fan 2 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

## Packing List

### Standard

User's manual	
59380402010E	COM cable with bracket
594G5208000E	SATA 3.0 cable 180D, 500 mm

## Ordering Information

### Standard

SHB160-R680E-DGG PCIex4 (P/N: E38C160100)	PICMG 1.3 full-size CPU card with 14th/13th/12th LGA1700 socket, Intel® R680E, ECC, DVI-I, 2.5GbE LAN, 6 SATA, and PCIe x4 BIOS
SHB160-H610E-DGG PCIex4 (P/N: E38C160101)	PICMG 1.3 full-size CPU card with 14th/13th/12th LGA1700 socket, Intel® H610E, DVI-I, 2.5GbE LAN, 4 SATA, and PCIe x4 BIOS
SHB160-R680E-DGG PCIex1 (P/N: E38C160102)	PICMG 1.3 full-size CPU card with 14th/13th/12th LGA1700 socket, Intel® R680E, ECC, DVI-I, 2.5GbE LAN, 6 SATA, and PCIe x1 BIOS
SHB160-H610E-DGG PCIex1 (P/N: E38C160103)	PICMG 1.3 full-size CPU card with 14th/13th/12th LGA1700 socket, Intel® H610E, DVI-I, 2.5GbE LAN, 4 SATA, and PCIe x1 BIOS

### Optional

5938A808010E	2 x USB 2.0 cable with bracket, P=2.54 mm, L=190 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
711000001500	2U special cooler kit for SHB160, compatible, 125W
711000001400	1U special cooler kit for SHB160, compatible, 65W
711000003800	1U special cooler with blower fan for SHB160

\* All SHB160 series models require specially designed coolers. Please order the complete set from our optional items: the 2U cooler (711000001500) for CPUs with a 125W TDP or the 1U cooler (711000001400 and 711000003800) for CPUs with a 65W TDP.