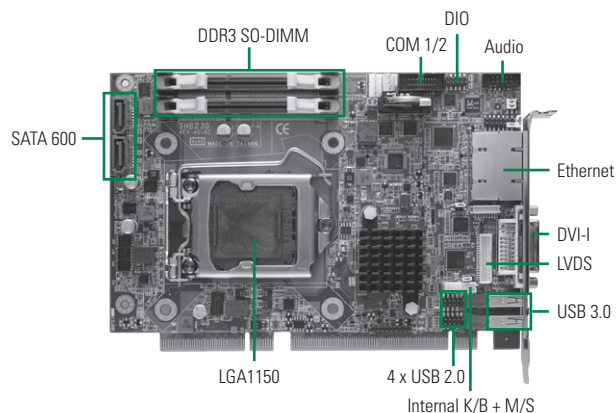


# SHB230

PICMG 1.3 Half-size CPU Card with LGA1150 4th Gen Intel® Core™ i7/i5/i3 & Celeron® Processor, Intel® Q87, SATA3, USB 3.0, DVI-I/LVDS and Dual LANs

## Features

- LGA1150 4th gen Intel® Core™ i7/i5/i3 and Celeron® processor (Haswell/Haswell Refresh)
- Intel® Q87 chipset
- 2 DDR3-1333/1600 SO-DIMM, up to 16GB
- DVI-I/LVDS with dual view supported
- Supports Intel® AMT 9.0
- 2 SATA-600 with RAID 0/1



## Core System

CPU	LGA1150 Socket 4th generation Intel® Core™ i7/i5/i3 & Celeron® Low Power DT processor (Haswell/Haswell Refresh), TDP up to 45W
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM, up to 16GB
Chipset	Intel® Q87
BIOS	AMI
SSD	1 x CFast™
Watchdog Timer	225 levels, 1~255 sec.
Expansion Interface	1 x PCIe x16 1 x PCIe x4 or 4 PCIe x1
Battery	Lithium 3v/220 mAh
Power Requirement	Intel® Core™ i7-4770TE@2.3 GHz, 8 GB DDR3 +5V@1.85A, +12V@2.3A, +5VSB @ 0.2A, +3.3V @ 1.5A
Size	185 x 126 mm
Board Thickness	1.6mm
Temperature	0°C ~ +60°C (32°F ~ 140°F), operation
Operation Humidity	10% ~ 95% relative humidity, on-condensing

## I/O

MIO	2 x RS-232/422/485 (COM 1/2) 1 x PS2 keyboard & mouse
RIO	2 x RJ-45 2 x USB 3.0 1 x DVI-I
SATA	2 x SATA-600 with RAID 0/1
Hardware Monitoring	Detect CPU/System temperature, voltage and support Smart Fan control
Ethernet	1st ports as 10/100/1000 Mbps supports WOL, RPL/PXE Boot ROM with Intel® i217LM with iAMT 9.0 support 2nd port as 10/100/1000 Mbps supports WOL, RPL/PXE Boot ROM with Intel® i210AT
Audio	HD Codec audio as MIC-in/Line-in/ Line-out/Speaker-out with Realtek ALC662
USB	4 x USB 2.0
DIO	Default 4 x IN & 4 x OUT, programmable
SMBus	N/A

## Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVMT
Display Interface	1 x DVI-I connector 1 x LVDS 24-bit dual channel

## Packing List

### Standard

Quick installation guide, user's manual/utility CD, cable

### Cable

Part Number	Description	Qty
59380000300E	COM x 2 w/bracket, P=1.27 x 2.54, L=300 mm	1
593826A0000E	SATA signal cable 500 mm	1

## Ordering Information

### Standard

SHB230DGGA (P/N: E38C230100)	PICMG 1.3 half-size CPU card with LGA1150 socket, Intel® Core™ i7/i5/i3 processor, Intel® Q87, SATA3, USB 3.0, DVI-I, 2 GbE LANs and CFast™
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### Optional

59384500100E	SBC84500 audio cable w/bracket, P=2.0 mm, L=450 mm
594C2302500E	PS2 keyboard/mouse cable
594C2303500E	DIO cable, L=150 mm
594C2302800E	USB cable, L=190 mm

