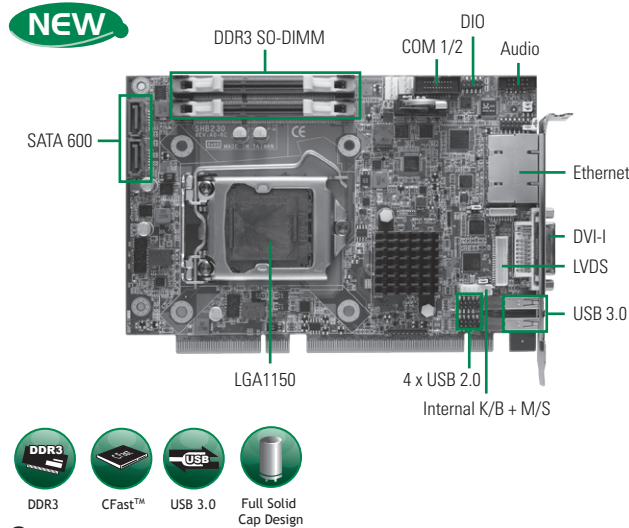


SHB230

4th Generation Intel® Core™ i7/i5/i3
(Codename Haswell/Haswell Refresh)
PICMG 1.3 Half-size CPU Card with SATA3,
USB 3.0, DVI-I/LVDS and Dual LANs



System

CPU	LGA1150 Socket for 4th Generation Intel® Core™ i7/ i5/ i3/ Celeron® Low Power DT processors (Codename Haswell/ Haswell Refresh), TDP up to 45W
System Memory	2 x 204-pin DDR3-1333/1600 SO-DIMM, max. up to 16 GB
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 (COM1/2) 1 x PS2 Keyboard 1 x PS2 Mouse
RIO	2 x RJ-45, 2 x USB 3.0, 1 x DVI-I
SATA	2 x SATA-600, support RAID 0/1
Hardware Monitoring	Detect CPU/System temperature, voltage and support Smart Fan control
Ethernet	1st ports as 10/100/1000Mbps supports WOL, RPL/PXE Boot ROM with Intel® i217LM with AMT 9.0 support 2nd port as 10/100/1000Mbps 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

Features

- 4th Generation for Intel® Core™ i7/i5/i3/Celeron® Low Power DT processors (Codename Haswell/Haswell Refresh)
- Intel® Q87 PCH
- 2 DDR3-1333/1600 SO-DIMM support max. up to 16 GB
- Supports Dual Display (DVI-I and LVDS)
- Supports iAMT 9.0
- 2 SATA 6Gbs with RAID 0,1

Display

Chipset	Intel® HD Graphics
Memory Size	Intel® DVM T
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=300mm	1
593826A0000E	SATA signal cable 500 mm	1

Ordering Information

Standard

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

Optional

59384500100E	SBC84500 Audio Cable w/bracket, P=2.0, L=450mm
594C2302500E	PS2 KEYBOARD_MOUSE CABLE, L=290mm
594C2303500E	DIO CABLE, L=150mm
594C2302800E	USB CABLE, L=190mm