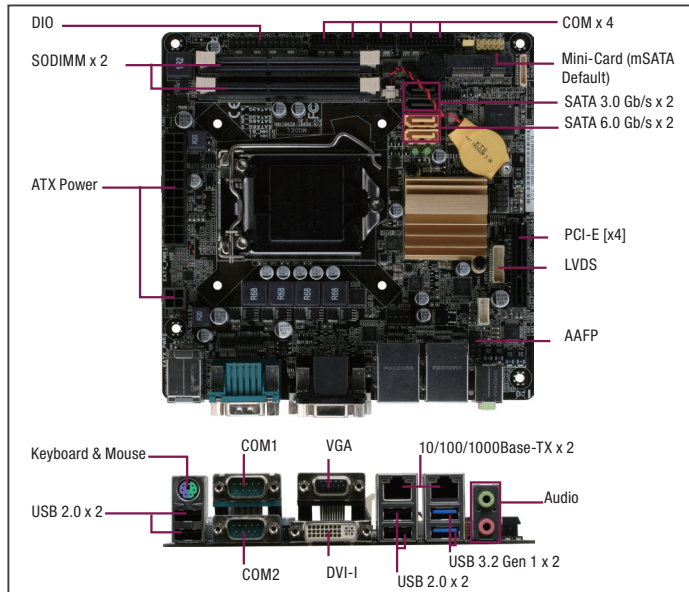


EMB-H81A

Mini-ITX with LGA1150 Socket for 4th Generation Intel® Core™ i Series Processor, SATA 6.0 Gb/s x 2, SATA 3.0Gb/s x 2, USB x 9



Features

- LGA1150 Socket for 4th Generation Intel® Core™ i Series Processor
- Dual Independent Display: VGA, DVI-I, LVDS
- Gigabit Ethernet x 2
- SATA 6.0 Gb/s x 2
- USB 3.2 Gen 1 x 2, USB 2.0 x 7
- PCI-E2.0 [x4] x 1, Full-size Mini-Card (PCI-E + USB) with mSATA (Optional) x 1



Specifications

System	
Processor	4th Generation Intel® Core™ i Series 22nm LGA1150 socket Processor, Max. 65W, TDPs
Chipset	Intel® H81
Memory	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture(flat type)
I/O Chipset	NCT6791D, NCT5104D
Ethernet	Realtek® PCIe Gb LAN 8111F x 2
Audio	Realtek® ALC887
TPM	Infineon SLB9635 TT 1.2
Expansion Slots	PCIe [x4] x 1, Full-size Mini-Card (PCIe+USB default) (mSATA Default) x 1,
BIOS	64 M bit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 steps by software program
Smart Fan Control	CPU Fan/ Chassis Fan
Wake On LAN/ PXE	Yes (WOL/PXE)
Power State	S3, S4, S5
Graphics	
Graphics Chipset	Intel® HD Graphics
Graphics Multi Display	VGA + LVDS, VGA + DVI-I, LVDS + DVI-I
VGA	Up to 1920 x 1200 @60 Hz
DVI	Up to 1920 x 1200 @60 Hz
HDMI	—
Display Port	—
LVDS	Up to 1920 x 1200 @60 Hz, dual-channel 18/24-bit Supports LVDS
eDP	—
Backlight Control	Voltage/PWM
Environment & Power & ME	
Battery	Lithium battery
Power Requirement	24-pin ATX connector x 1, 4pin ATX 12V Power connector x 1
Operating Temperature	32°F ~140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~185°F (-40°C ~85°C)
Operating Humidity	0% ~ 90% R/H, non-condensing
Certificate	CE & FCC
Form Factor	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
Weight	1.1 lb (0.5 Kg)
MTBF (Hours)	288,500
Rear Panel I/O Ports	
USB	USB 3.2 Gen 1 x 2, USB 2.0 x 4
Display I/O	VGA x 1, DVI-I x 1
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2

Serial Port	COM (RS-232/422/485) x 1, COM (RS-232) x 2
PS/2 Port	—
Others	—
Internal I/O Connectors	
Storage	SATA3 (6.0Gb/s) x 2, SATA2 (3.0Gb/s) x 2 (1 colay with mainboard), Full/Half Size Mini-Card slot x 1
USB	USB 2.0 connectors support additional 2 USB ports (2.54mm) x 1, USB 2.0 connectors support additional 1 USB ports (2.00mm) x 1
Display I/O	LVDS connector x 1, LCD Inverter connector x 1
Audio I/O	AAFP x 1
Serial Port	Box header for COM (RS-232) x 4
PS/2 Port	—
Parallel Port	SPP/EPP/ECP Mode
DIO	Digital I/O header x 1
FAN	CPU Fan connector x 1, Chassis Fan connector x 1
Power	12V AUX Power Connector x 1, 24-pin EATX Power connector x 1
Others	Front Panel connector x 1
OS	
OS Support	Windows® 10 64-bit, Windows® 7 32/64-bit, Windows® 8 32/64-bit, Linux Fedora

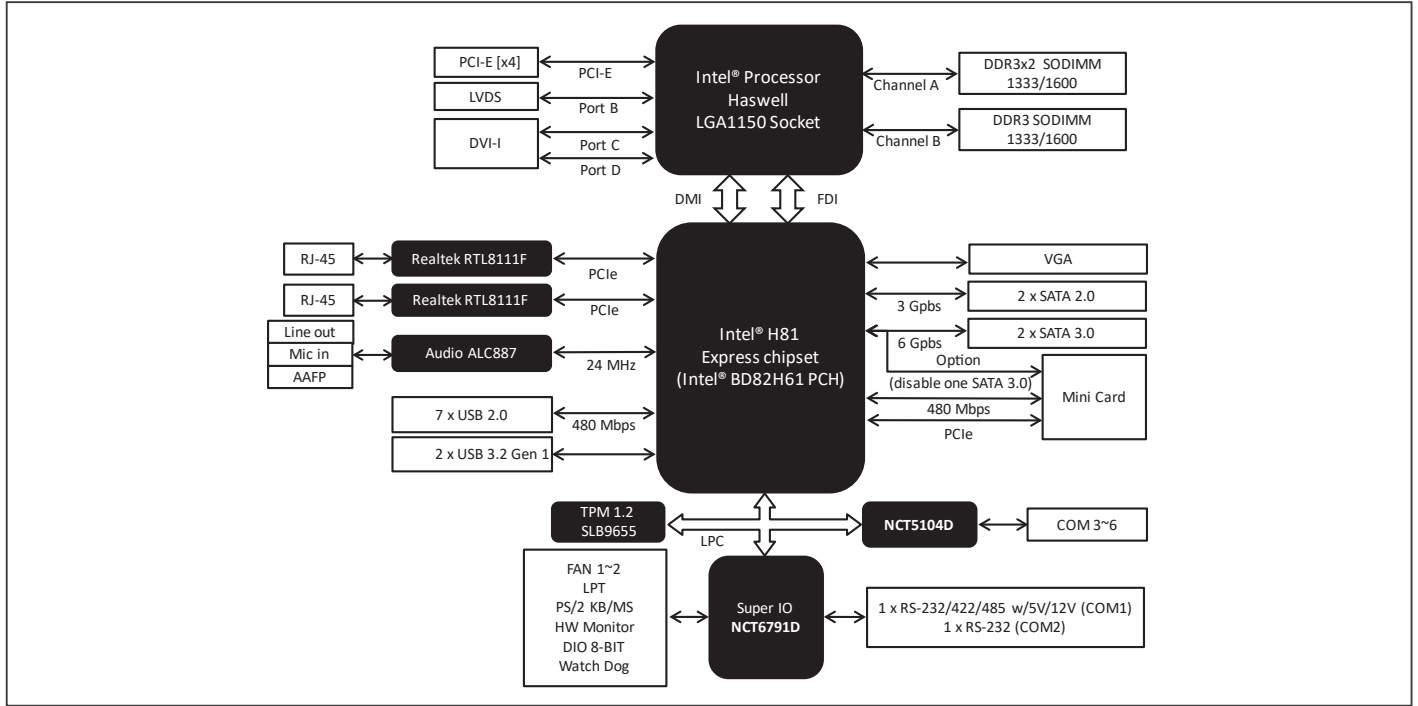
Packing List

- SATA Cable
- I/O Shield
- EMB-H81A

Optional Accessories

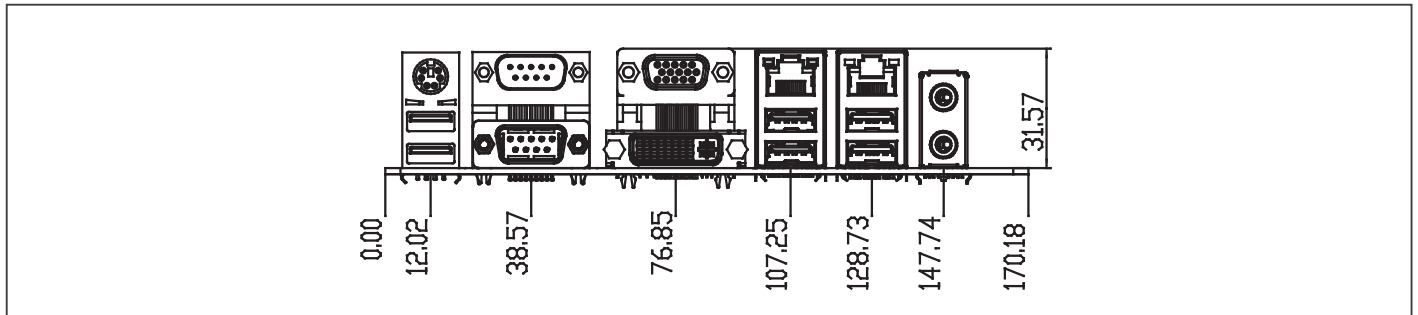
Part Number	Description
1759200172	CPU Cooler (2-Ball, Screw with Retention Plate)
175921156B	CPU Cooler (2-Ball, Push-pin Type)
1709100330	USB 2.0 Cable (9P, 330MM, p=2.54mm, w/ bracket)
1709100201	USB 2.0 Cable (10P, 200MM, p=2.00mm, w/ bracket)
1701100206	COM cable (200MM, p=2.00mm)
1701260305	LPT Cable (25P, 270MM)
1701100206	COM Cable (200MM, p=2.00mm)
1700060192	PS/2 Cable (6P, 190mm, P=2.0mm)
170910020K	USB 2.0 Cable (9P, 200MM, p=2.54mm, w/o bracket)
1702150300	SATA Power Cable, 4P, 2.54mm
1709050201	USB 2.0 Cable (5P, 220MM, p=2.00mm)

Block Diagram



Dimension

Unit: mm



Order Information

Part Number	CPU	RAM	Fan/Fanless	Display	Storage	LVDS	LAN	USB	RS-232	RS-232/422/485	Expansion Slot	Power	TPM	Temp.
EMB-H81A-A10	Socket	SODIMM	Fan	VGA, LVDS, DVI-I	SATA3 x 2, SATA2 x 2	Dual Channel 18/24-bit	GbE x 2	USB 3.2 Gen 1 x 2, USB 2.0 x 7	5	1	PCI-E[x4] x 1, Full size Mini-Card x 1	ATX	TPM1.2 Onboard	32°F ~ 140°F (0°C ~ 60°C)
EMB-H81A-A10-MS	Socket	SODIMM	Fan	VGA, LVDS, DVI-I	SATA3 x 2, SATA2 x 1	Dual Channel 18/24-bit	GbE x 2	USB 3.2 Gen 1 x 2, USB 2.0 x 7	5	1	PCI-E[x4] x 1, Full size Mini-Card x 1	ATX	TPM1.2 Onboard	32°F ~ 140°F (0°C ~ 60°C)