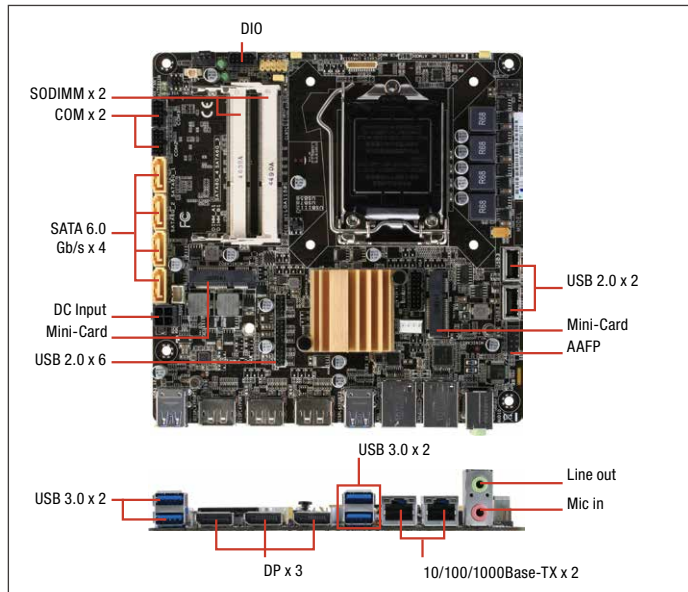


Mini-ITX, LGA1150 Socket for Intel® 4th Gen Core™ i Series Processor with 12V~24V Wide Range Power Input, USB x 12, DP x 3



Specifications

System	
Processor	Intel®4th Gen. Core™ i Series 22nm LGA1150 socket Processor, Max. 65W TDPs
Chipset	Intel® Q87
Memory	DDR3 1333/1600 MHz SODIMM x 2, Up to 16GB, Non-ECC, Dual-channel memory architecture(flat type)
Graphics	Intel® HD Graphics
I/O Chipset	NCT6791D
Ethernet	Intel® PHY I217LM Giga LAN x 1, Intel® I210AT Giga LAN x 1
Audio	Realtek® ALC887
TPM	Infineon SLB9655 TT 1.2(default: No)
Expansion Slots	Full-size Mini-Card x 1 (mSATA default) (PCIe+USB optional, selected by jumper), Half-size Mini-Card x 1 (PCIe+USB default) (mSATA optional, selected by jumper).
BIOS	128M bit Flash ROM, AMI BIOS
H/W Monitor	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore 5V/12V, Fan Monitor on CPU/Chassis
WatchDog Timer	1~255 step 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	DP, DP+DP, DP+DP+DP
VGA	—
DVI	—
HDMI	—
Display Port	Up to 3840 x 2160 @60 Hz, with Digital Audio
LVDS	—
eDP	—
Backlight Control	—
Environment & Power & ME	
Battery	Lithium battery
Power Requirement	12-24V DC (wide rage:12V-5%~ 24V+10%)
Operating Temperature	32°F ~140°F (0°C ~ 60°C)
Storage Temperature	-40°F ~185°F (-40°C ~85°C)
Operating Humidity	0% ~ 90%RH, 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)	48,944

Features

- Intel® 4th Generation Core™ i Series 22nm Processor
- DDR3 1333/1600 MHz SODIMM x 2, Up to 16 GB
- Three Independent Display: DP x 3
- SATA 6.0 Gb/s x 4
- USB 3.0 x 4, USB 2.0 x 8
- Full-size Mini-Card with Default mSATA x 1, Half-size Mini-Card with Optional mSATA x 1
- DC 12V ~ 24V



Rear Panel I/O Ports

USB	USB 3.0 x 4
Display I/O	DP x 3
Audio I/O	Mic-in x 1, Line-out x 1
LAN I/O	LAN (RJ-45) port x 2
Serial Port	—
PS/2 Port	—
Others	—

Internal I/O Connectors

Storage	SATA3 (6.0Gb/s) x 4, SATA power connector x 1, Full Size Mini-Card (mSATA) x 1
USB	USB 2.0 (2x5PIN, 2.00mm) x 3 ports support additional 6 USB, USB 2.0 vertical connectors x 2
Display I/O	—
Audio I/O	AAFP x 1
Serial Port	Boxer header for COM (RS-232) x 2
PS/2 Port	PS/2 Keyboard Mouse 6 PIN Connector x 1
Parallel Port	—
DIO	Digital I/O header x 1
FAN	4-pin CPU Fan connector x 1, 4-pin Chassis Fan connector x 1
Power	12V AUX Power Connector x 1, AT/ATX mode select jumper (optional) x 1
Others	Front Panel connector x 1, Chassis Intrusion x 1, CMOS jumper x 1

OS

OS Support	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Linux Fedora
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Packing List

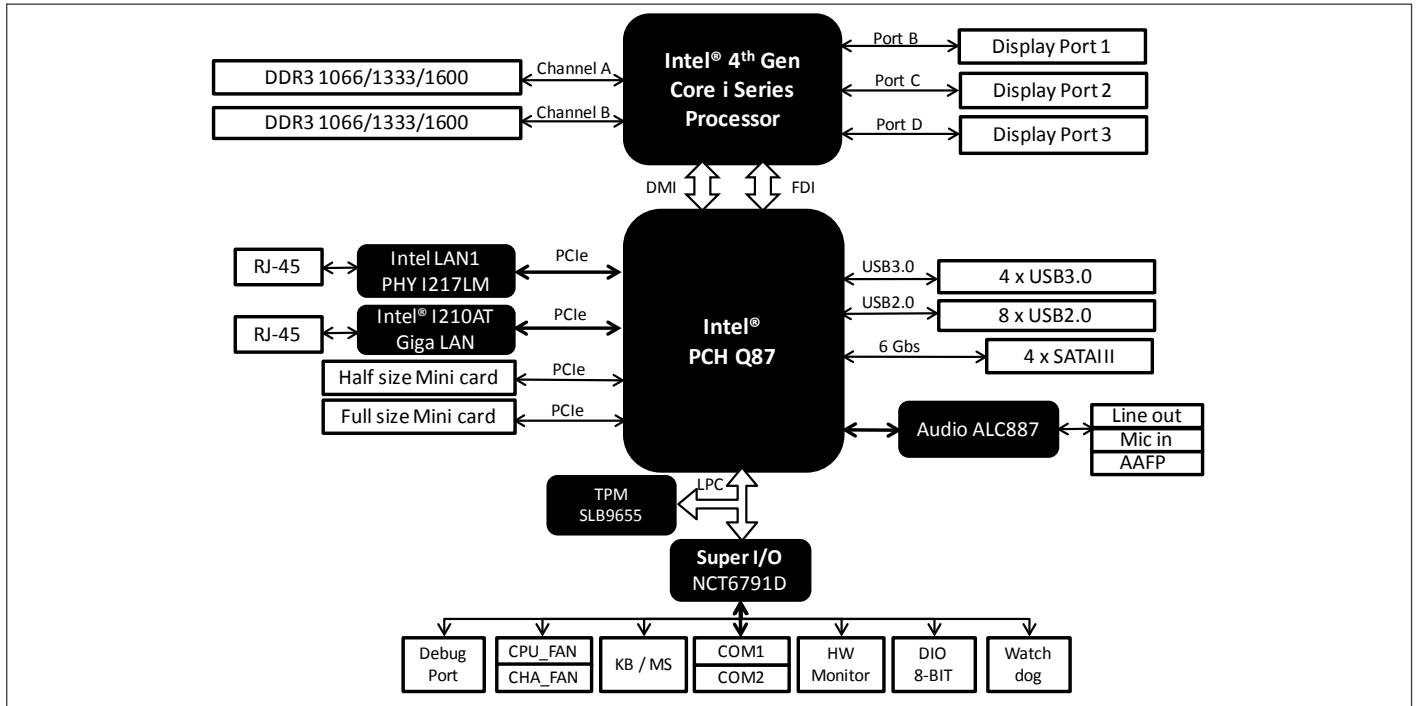
- SATA Cable
- SATA Power Cable
- I/O Shield
- Product DVD
- EMB-Q87B

Optional Accessories

Part Number	Description
1759200172	CPU Cooler (2-Ball, Screw with Retention Plate)
175921156B	CPU Cooler (2-Ball, Push-pin Type)
1700060152	PS/2 cable (6P, 150mm, p=2.00mm)
1709100201	USB 2.0 Cable (10P, 200MM, p=2.00mm, w/ bracket)
1701100206	COM cable (200MM, p=2.00mm)
COOLER-65W-01	CPU Cooler
1702150300	SATA Power Cable 4P, 2.54mm
ADAPTER_18W	DELTA, AOP-180MB FB
1255901201	Power Adapter

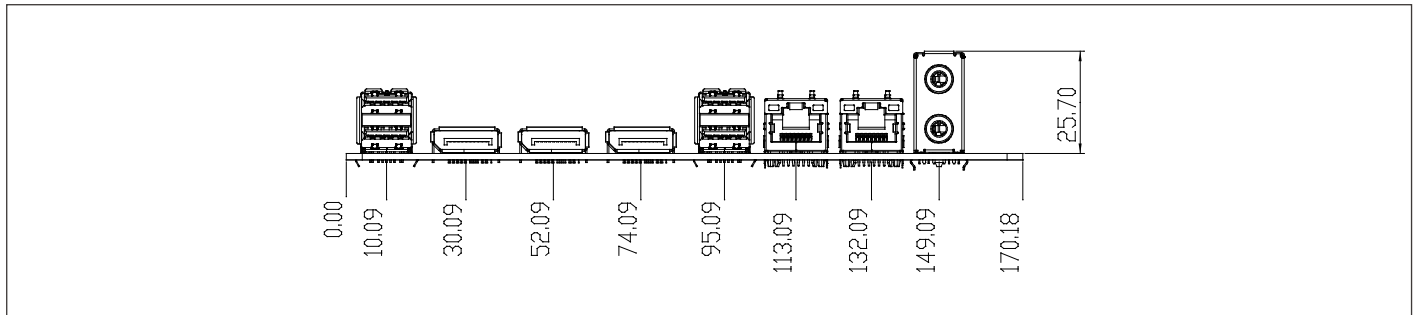
EMB-Q87B

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-Q87B-B10	Socket	SODIMM x 2	Fan	DP x 3	SATA3 x 4 Full size Mini-Card (mSATA)	—	GbE x 2	USB 3.0 x 4, USB 2.0 x 8	2	1	Full size Mini-Card x 1, Half size Mini-Card x 1	12-24VDC	Onboard	32°F ~ 140°F (0°C ~ 60°C)