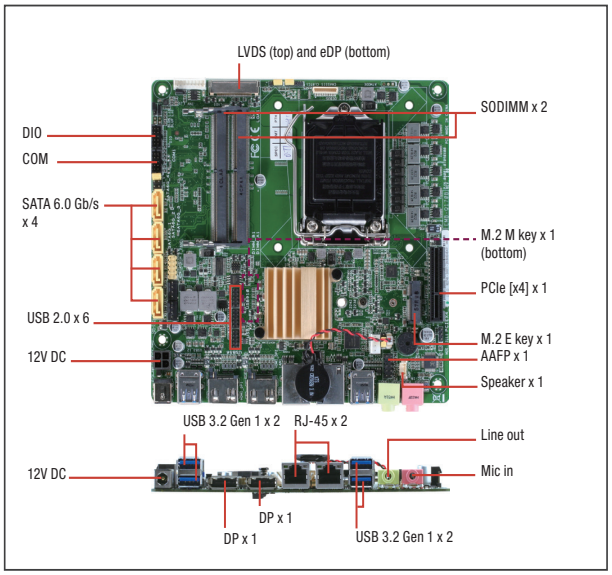
EMB-Q170B

6th/7th Generation Intel® Core™ i Series, LGA1151 Socket Processor, Max. 65W TDPs, M.2 x 2, SATA 6.0 Gb/s x 2, USB x 10



Features

- 6th/7th Generation Intel® Core™ i Series, LGA1151 Socket Processor
- DDR4 SODIMM x 2, Up to 32GB
- Three Independent Display: DP x 2, eDP x 1, LVDS x 1
- M.2 Slot (E-key) x 1 @Top Side, (M-key) x 1 @Bottom Side
- PCI-Express [x4] x 1
- Low Profile
- 4K for DP/eDP
- LAN1 Supports iAMT11.0

Specifications

System	
Processor	6th/7th Generation Intel® Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs
Chipset	Intel® Q170
Memory	DDR4 2133/1867 MHz SODIMM x 2, Up to 32GB, Non-ECC, Un-buffered Memory, Dual channel memory architecture
I/O Chipset	NCT6791D
Ethernet	Intel® PCIe Gb LAN 219LM for vPro x 1, Intel® PCIe Gb LAN 210AT x 1
Audio	Realtek® ALC897
TPM	Infineon SLB96XX TT 1.2/2.0 (default: No)
Expansion Slots	PCIe 3.0 [x4] x 1 M.2 M key (22 x 80 mm) at Bottom side x 1 M.2 E key (22 x 30 mm) at Top side x 1
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 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	2DP + LVDS, DP + eDP + LVDS, 2DP + eDP
VGA	—
DVI	—
HDMI	—
Display Port	Up to 4096 x 2160 @24 Hz / 3840 x 2160 @60 Hz, with Digital Audio
LVDS	Up to 1920 x 1200 @60 Hz, dual-channel 18/24-bit
eDP	UP to 4096 x 2340 @60Hz
Backlight Control	Voltage/PWM
Environment & Power & ME	
Battery	Lithium battery
Power Requirement	12VDC
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)	292,450
Rear Panel I/O Ports	
USB	USB 3.2 Gen 1 x 4
Display I/O	DP x 2
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	DC Jack x 1
Internal I/O Connectors	
Storage	SATA3 (6.0Gb/s) x 4, SATA power connector x 1, M.2 M key (22 x 80mm) at Bottom side x 1, M.2 E key (22 x 30mm) at Top side x 1
USB	USB 2.0 (2 x 5-pin, 2.00mm) x 3 ports support additional 6 USB.
Display I/O	40-pin LVDS connector x 1, 40-pin eDP connector x 1, LVDS 3.3V /5V jumper x 1, LCD DC / PWM mode jumper x 1, LCD backlight connector (inverter) x 1, LCD backlight 12V /5V jumper x 1
Audio I/O	AAFP x 1, Speaker x 1 (pin out refer to manual)
Serial Port	Box header for COM (RS-232/422/485) x 1
PS/2 Port	—
Parallel Port	—
DIO	Digital I/O box 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, Buzzer onboard (pin header) x 1, CMOS jumper x 1
OS	
OS Support	Windows® 7 32/64-bit, Windows® 8.1 32/64-bit, Windows® 10 64-bit, Ubuntu16.04.02/Kernel4.8.0

Packing List

- SATA Cable
- SATA Power Cable
- I/O Shield
- EMB-Q170B

Optional Accessories

Part Number	Description
1759200172	(TF)CPU Cooler Fan, LGA 1156 socket, 4P, 12V, 2-Ball Bearing, Dynatron, K785 (2U cooler)
175921156B	(TF)CPU Cooler Fan, LGA 1156 socket, 12V, 4P, 2Ball (Tray), Dreamer, DSA-00273
1709100201	USB 2.0 Cable (10P, 200MM, p=2.00mm, w/bracket)
1701100206	COM Cable (200MM, p=2.00mm)
1702150300	SATA Power Cable (4P, 300MM p=2.54mm)
COOLER-65W-01	CPU Cooler, LGA 1156, 12V, 65W, 4P, Kingcooler, 0571-1463R
1702151201	SATA Power Cable (4P, 120MM, p=2.5mm)
1700100491	USB 2.0 Cable (2 x 5P, 490mm, p=2.00mm)
125590084A	Adapter 12V, 84W/N3
1709050201	USB 2.0 Cable (5P, 220mm, p=2.00mm)

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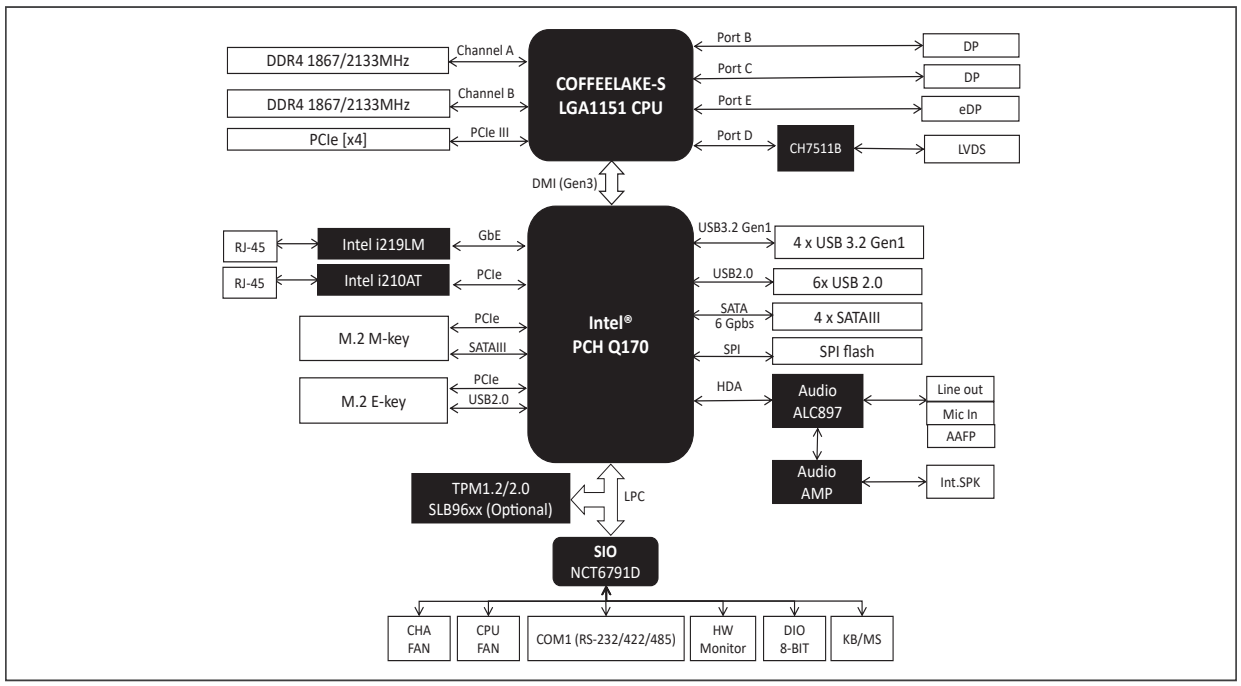
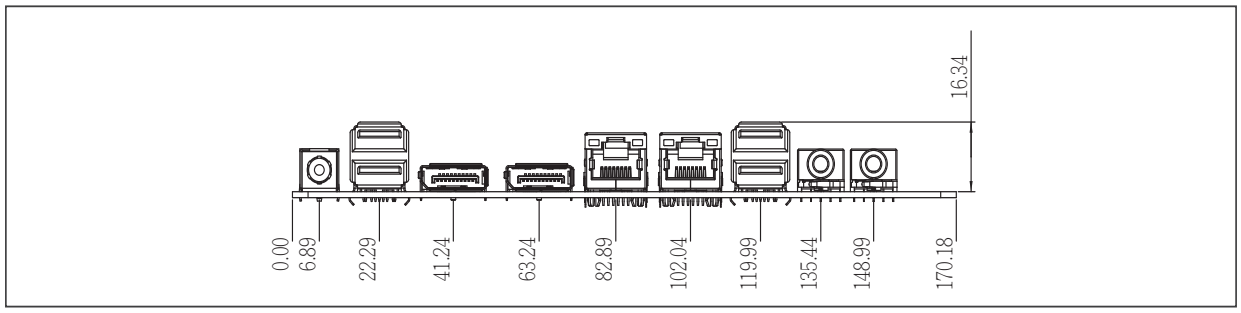
Block Diagram



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-Q170B-A11-210	Socket	SODIMM x 2	Fan	LVDS, eDP, DP	SATA3 x 4, M.2 (M-key)	Daul Channel 18/24 bit	GbE x 2	USB 3.2 Gen 1 x 4, USB2.0 x 6	—	1	PCIe [x4] x 1, M.2(M-key) x 1, M.2(E-Key) x 1	12VDC	—	32°F ~ 140°F (0°C ~ 60°C)

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