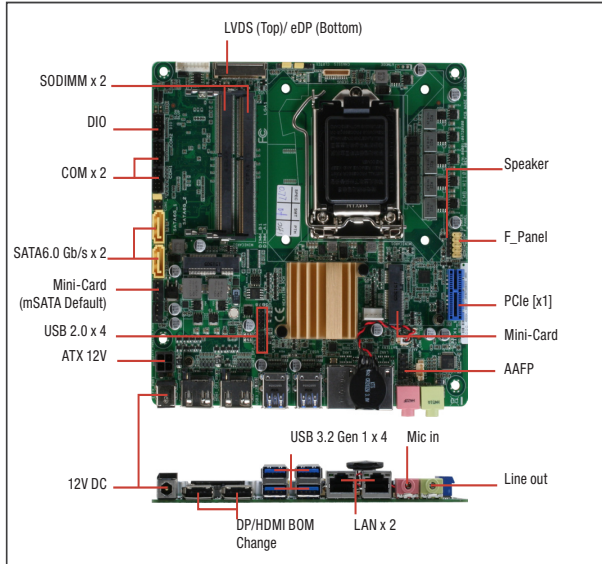


EMB-H110B

6th/7th Generation Intel® Core™ i Series, LGA1151 Socket Processor, Max. 65W TDPs, SATA 6.0 Gb/s x 2, USB x 8

Industrial Motherboards



Specifications

System	
Processor	6th/7th Generation Intel® Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs
Chipset	Intel® H110
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	Realtek® PCIe Gb LAN 8111H x 2
Audio	Realtek® ALC897
TPM	Infineon SLB96XX TT 1.2/2.0 (default: No)
Expansion Slots	PCIe 2.0 [x1] x 1, Full-size Mini-Card (mSATA default) (PCIe+USB optional) x 1, Half-size Mini-Card (PCIe+USB) x 1
BIOS	64 M 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	—
Graphics Multi Display	HDMI1+HDMI2, HDMI1+DP2, DP1+HDMI2, HDMI1+LVDS, HDMI2+LVDS, HDMI1+eDP, HDMI2+eDP, DP1+DP2, DP1+LVDS, DP2+LVDS, DP1+eDP, DP2+eDP
VGA	—
DVI	—
HDMI	Up to 4096 x 2160 @24 Hz / 2560 x 1600 @60 Hz, with Digital Audio (HDMI/DP Combo)
Display Port	Up to 1920 x 1200 @60 Hz, with Digital Audio (HDMI/DP Combo)
LVDS	Up to 1920 x 1200 @60 Hz, dual-channel 18/24-bit colay
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% 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)	315,210

Features

- LGA1151 Socket For 6th/7th Generation Intel® Core™ i Series Processor
- DDR4 SODIMM x 2, Up to 32GB
- Two Independent Display: DP/HDMI (BOM Change), LVDS, eDP
- SATA 6.0 Gb/s x 2, Half-size Mini-Card x 1, Full/Half-size Mini-Card x 1
- PCI-Express [x1] x 1
- 12V DC
- Low Profile
- 4K for HDMI/eDP



Rear Panel I/O Ports

USB	USB 3.2 Gen 1 x 4
Display I/O	DP/HDMI (BOM Change) 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 2, Full Size Mini-Card (mSATA) x 1, SATA power connector x 1 USB 2.0 (2 x 5-pin, 2.00mm) x 2 ports support additional 4 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
Serial Port	Box header for COM (RS-232/422/485) x 1, Box header for COM (RS-232) 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

- 14001-00630100
SATA 6G Cable (7P, 180; 90, 500mm 2 in1)
- 14001-00230100
SATA to Power Cable (4P, 120MM)
- I/O Shield
- EMB-H110B

Optional Accessories

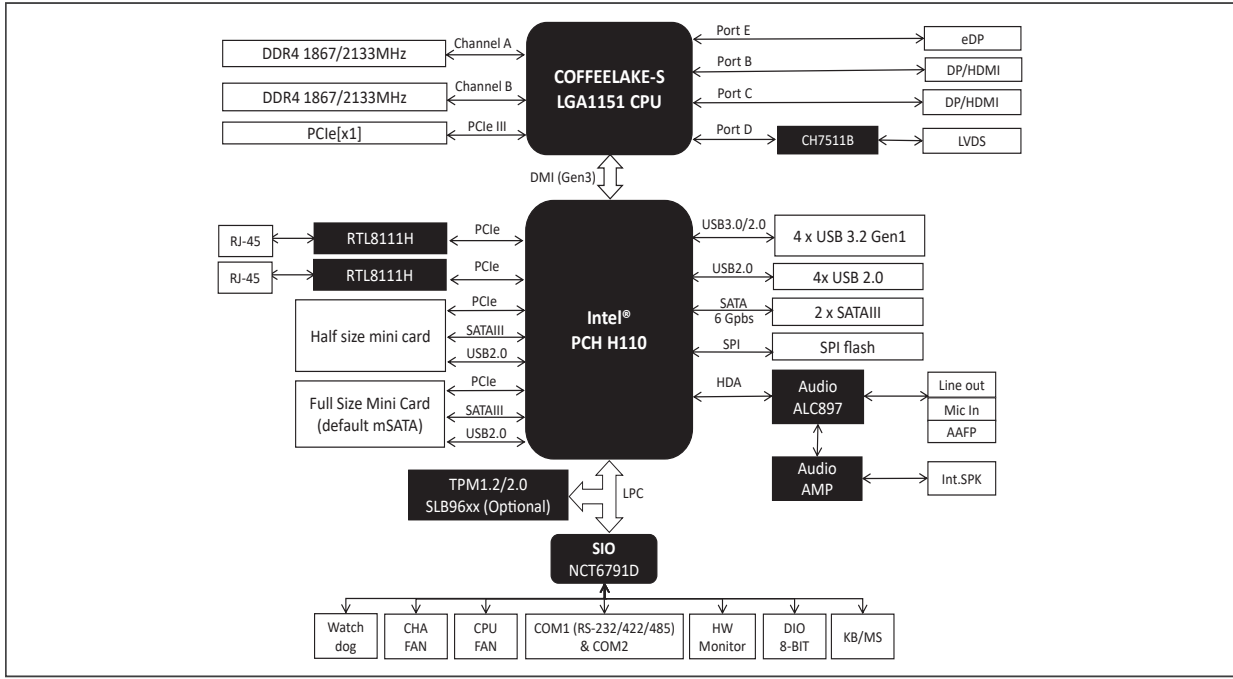
Part Number	Description
1759200172	CPU Cooler (2-Ball, Screw with Retention Plate)
175921156B	CPU Cooler (2-Ball, Push-pin Type)
COOLER-65W-01	CPU Cooler, 1U, 12V, 65W, 4P
1709100201	USB 2.0 Cable (10P, 200MM, p=2.00mm, w/ bracket)
1701100206	COM Cable (200MM, p=2.00mm)
1702150300	SATA Power Cable, 4P, 2.54mm
125590084A	Adapter 12V, 84W/N3
1700100491	USB 2.0 Cable (2 x 5P, 490mm, p=2.00mm)
1709050201	USB 2.0 Cable (5P, 220mm, p=2.00mm)

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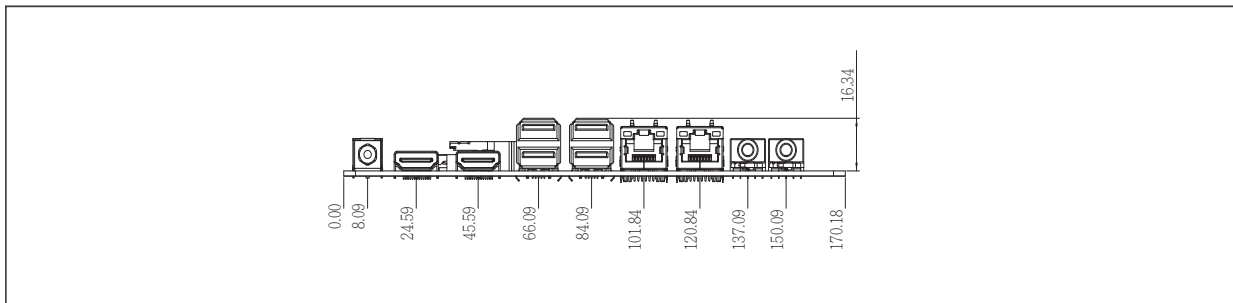
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Industrial Motherboards

Block Diagram



Dimension Unit: mm



Ordering Information

Part Number	CPU	RAM	Fan/Fanless	Display	Storage	LVDS	LAN	USB	RS-232	RS-232/422/485	Expansion Slot	Power	TPM	Temp.
EMB-H110B-A14-HH-K	Socket	SODIMM x 2	Fan	LVDS, eDP, HDMI x 2	SATA3 x 2, Full size mini card x 1 (mSATA)	Dual Channel 18/24 bit	GbE x 2	USB 3.2 Gen 1 x 4, USB2.0 x 4	1	1	PCIe2.0 [x1] x 1, Half-size Mini Card (PCIe+USB default) x 1	12VDC	—	32°F ~ 140°F (0°C ~ 60°C)

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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