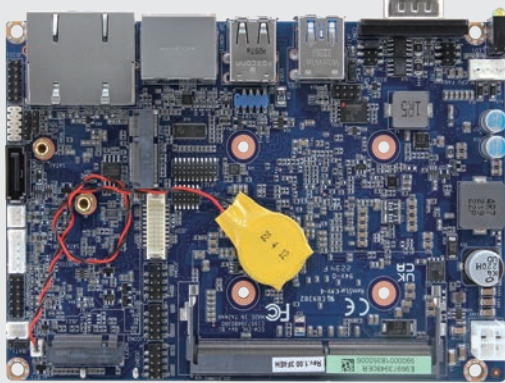




Features

- Bottom Layer Soldered Processor
- Single DRAM Socket, Max, Up to 32GB DDR4 3200MTs (non-ECC Supported)
- Triple Display, DP 1.4a, HDMI 2.0b, eDP 1.3
- Dual Expansion Slot, M.2 Key-B, M.2 Key-E
- Dual Intel® Gigabit Ethernet, 2.5GbE
- DC in +9V ~ +36V



HDMI



DP



DDR4
SO-DIMM



USB 3.1



RS232/422/485

Specifications

System Information

Processor	Intel® Atom® x6000E and Celeron® Processor (with CPU Bottom Mounted) Intel® Celeron® J6412 Processor (1.5M Cache, up to 2.60 GHz) Intel® Celeron® J6413 Processor (1.5M Cache, up to 3.00 GHz) Intel Atom® x6413E Processor (1.5M Cache, up to 3.00 GHz) Intel Atom® x6425RE Processor (1.5M Cache)
System Memory	1 x 260-pin DDR4 3200MHz SO-DIMM Socket, Supports Up to 32GB Max. (non ECC only)
I/O Chipset	EC iTE IT5571
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
BIOS	AMI BIOS, 256Mbit SPI Flash ROM
H/W Status Monitor	CPU & system temperature monitoring Voltages monitoring
TPM	Onboard NuvoTon_NPCT750AADYX (for standard temp) & NPCT754AADYX (for extend temp) supports TPM 2.0 co-lay Infineon_SLB9670VQ2.0
Board	3.5"

Expansion

Expansion	1 x M.2 Type B, 2242/3042, PCIe x2, or (PCIe x1+USB 3.1 Gen1), or (SATA III + USB 3.1 Gen1), USB 2.0, SIM Slot for SSD/LTE/IO Cards)*Default is PCIe x1/SATA III+USB 3.1 Gen1 1 x M.2 Type E, 2230, PCIe x1, USB 2.0)
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Storage

Storage	1 x M.2 (Type B, 2242) 1 x SATA III
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Display

Graphic Chipset	Intel® UHD Graphics
Spec. & Resolution	HDMI 2.0b Max resolution 4096 x 2160@60Hz DP 1.4a Max resolution 4096 x 2160@60Hz eDP1.3 Max resolution 4096 x 2160@60Hz
Multiple Display	Triple Display

Audio

Audio Codec	Realtek ALC888S HD Audio Decoding Controller
Audio Interface	Line-in, Mic-in, Line-out

Ethernet

LAN Chipset	2 x Intel® I226LM/I226IT
Ethernet Interface	10/100/1000/2.5G Base-Tx GbE compatible
LAN Port	2 x RJ-45

Power Requirement

Power Mode	AT/ATX (Default Setting: AT)
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Software Support

OS	Windows 10, Linux
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Certification

Certification Information	CE, FCC Class, RoHS Compliant
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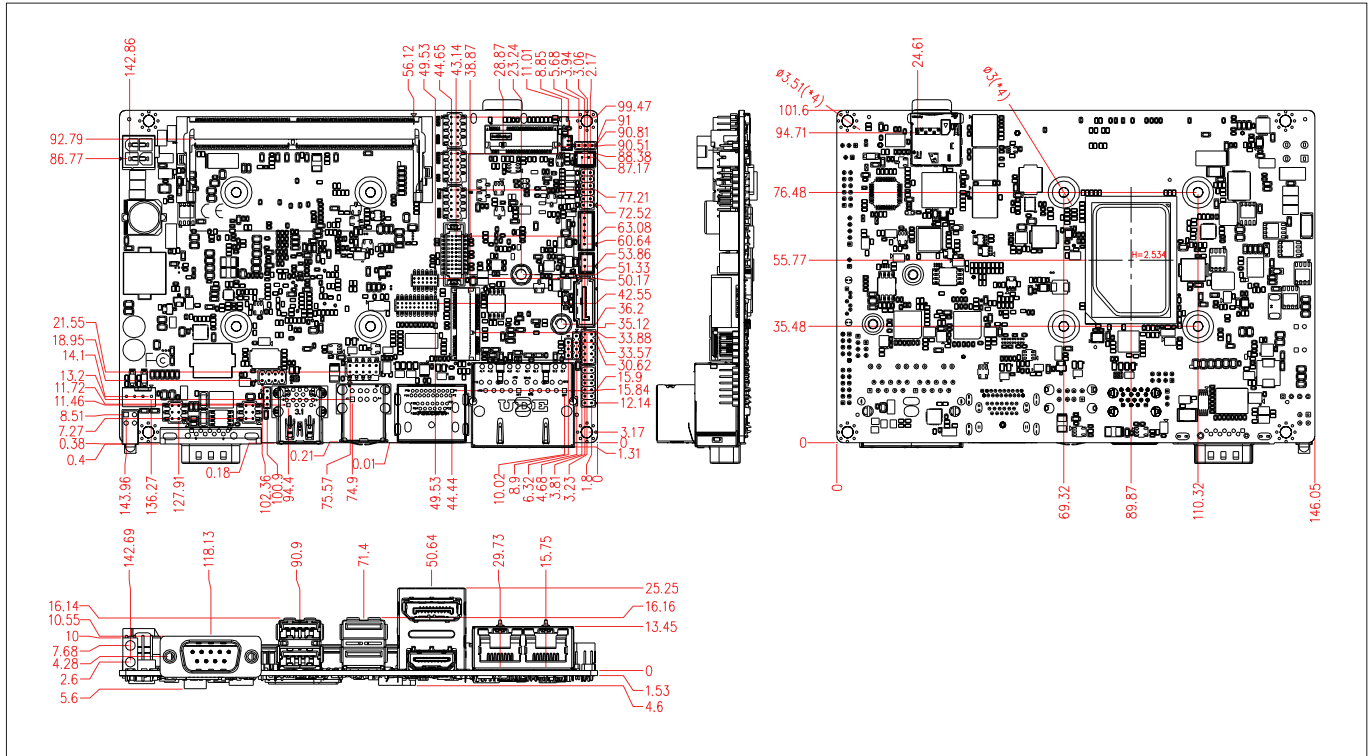
I/O

USB	2 x USB 3.1 (Gen2 10Gbps) 4 x USB 2.0
COM Port	3 x RS232 1 x RS-232/422/485
SATA	1 x SATA III
DIO	1 x 8-bit GPIO
MIO	1 x eSPI 1 x SIM Card Slot

Mechanical & Environmental

Operating Temp.	Standard Temperature: 0°C ~ 60°C with 0.5m/s Air Flow Extend Temperature: -40°C ~ 85°C with 0.5m/s Air Flow.
Storage Temp.	-40°C ~ 85°C (-40°F ~ 185°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44lbs (0.2kg)
Power Requirement	DC in +9V ~ +36V
Dimension (L x W)	5.7" x 4" (146mm x 101mm)

Mechanical Drawing



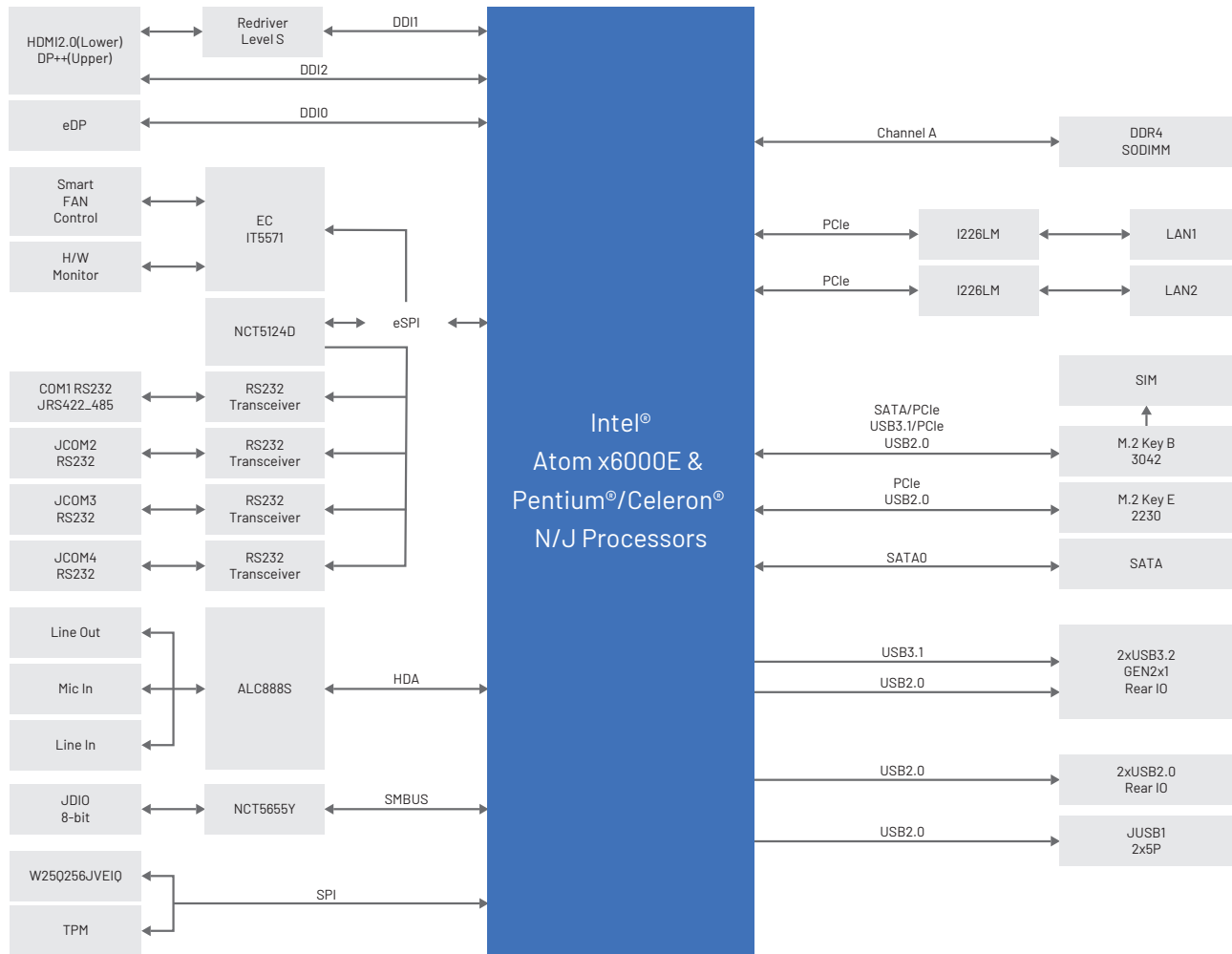
Ordering Information

P/N	Processor	Chipset	LAN	USB	COM	PCIe Slot	Power Input	Temp.
ECM-EHL-J6412-B1R	Intel® Celeron® Processor J6412	NA	2	6	4	0	+9~36V DC	0°C ~ 60°C (32°F ~ 140°F)
ECM-EHL-J6413-B1R	Intel® Celeron® Processor J6413	NA	2	6	4	0	+9~36V DC	0°C ~ 60°C (32°F ~ 140°F)
ECM-EHL-X13E-B1R	Intel Atom® Processor x6413E	NA	2	6	4	0	+9~36V DC	-40°C ~ 85°C (-40°F ~ 185°F)
ECM-EHL-X25RE-B1R	Intel Atom® Processor x6425RE	NA	2	6	4	0	+9~36V DC	-40°C ~ 85°C (-40°F ~ 185°F)

Packing List

Item	P/N	Quantity
Serial ATA cable (7-pin, standard)	-	1
Wire SATA power cable (15-pin, 2P/2.0mm)	-	1
Flat cable 9P(M)-PHD 10P/2.0mm)	-	1
CPU Heatsink	-	1
3M foam (VHB-4622 10mm*20mm*1.1mm)	-	1

Block Diagram



I/O Overview

