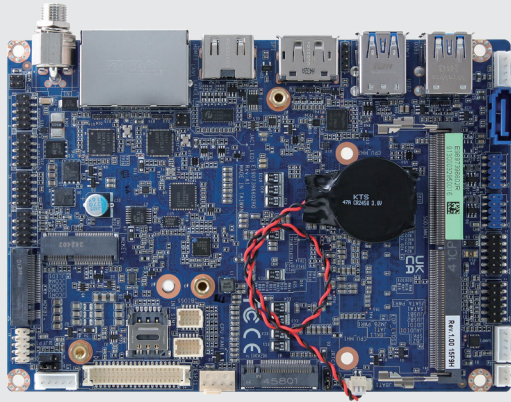




Features

- Bottom Layer Soldered Processor
- One 262-pin DDR5 6400MHz SO-DIMM socket, supports up to 48GB Max.
- Four Display, 1x DP, 1x HDMI, 1x 2CH LVDS or eDP, 1x USB Type C support DP
- Expansion Slot, M.2 Key-B, M.2 Key-E, M.2 Key-M
- Two Gigabit Ethernet, 2 x 2.5GbE
- DC in +12V ~ +24V



HDMI



DP++

DDR5
SO-DIMM

USB 3.2



RS232/422/485

Specifications

System Information

Processor	Intel® Core™ Ultra 5 Processor 225U Intel® Core™ Ultra 5 Processor 225H
System Memory	1x 262-pin DDR5 6400MHz SO-DIMM socket, supports up to 48GB Max.
I/O Chipset	EC ITE IT5782VG
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 NPCT760AABYX supports TPM 2.0
Board	3.5"

Expansion

Expansion	1x M.2 Key M 2280 (with 1x PCIe Gen4 x4) NVME 1x M.2 Key B 3042/3052/2242 (with 1x PCIe x1 Gen 2 or SATA, USB 3.2 Gen1x1, USB 2.0 with 1x SIM card slot support WWAN+GNSS) support 5G (3.3V & 3.8V) * Only supports one SIM card (co-lay 1x 10pin FPC connector for uSIM card adapter) 1x M.2 Key E 2230 support WiFi module (1x PCIe x1 & USB 2.0 Signal)
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Storage

Storage	1x M.2 (Key M, 2280) 1x M.2 (Key B, 3042/3052/2242) 1x SATA III
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Display

Graphic Chipset	Intel® Graphics
Spec. & Resolution	1x DP 1.4a: Max: 7680 x 4320@30 Hz 1x USB Type C support DP: 4096 x 2160@60Hz 1x HDMI 2.0b: 3840 x 2160@60Hz 1x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) or 1x eDP: 1920 x 1080@60Hz (2 Lanes), default LVDS Note: EDP_LVDS1 Support 1x LVDS or 1x eDP
Multiple Display	Four Display
LVDS	1x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7513A-BF eDP to LVDS) or 1x eDP: 1920 x 1080@60Hz (2 Lanes) Default LVDS. Note: EDP_LVDS1 Support 1x LVDS or 1x eDP

Audio

Audio Codec	Realtek ALC888S HD Audio Decoding Controller
Audio Interface	Line-in, Mic-in, Line-out
Audio Amplifier	2 x 2W 4Q Amplifier

Ethernet

LAN Chipset	1x Intel® I226LM 2.5 Gigabit Ethernet Controller 1x Intel® I226V 2.5 Gigabit Ethernet Controller
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 11, Linux
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Certification

Certification Information	CE, FCC, RoHS Compliant
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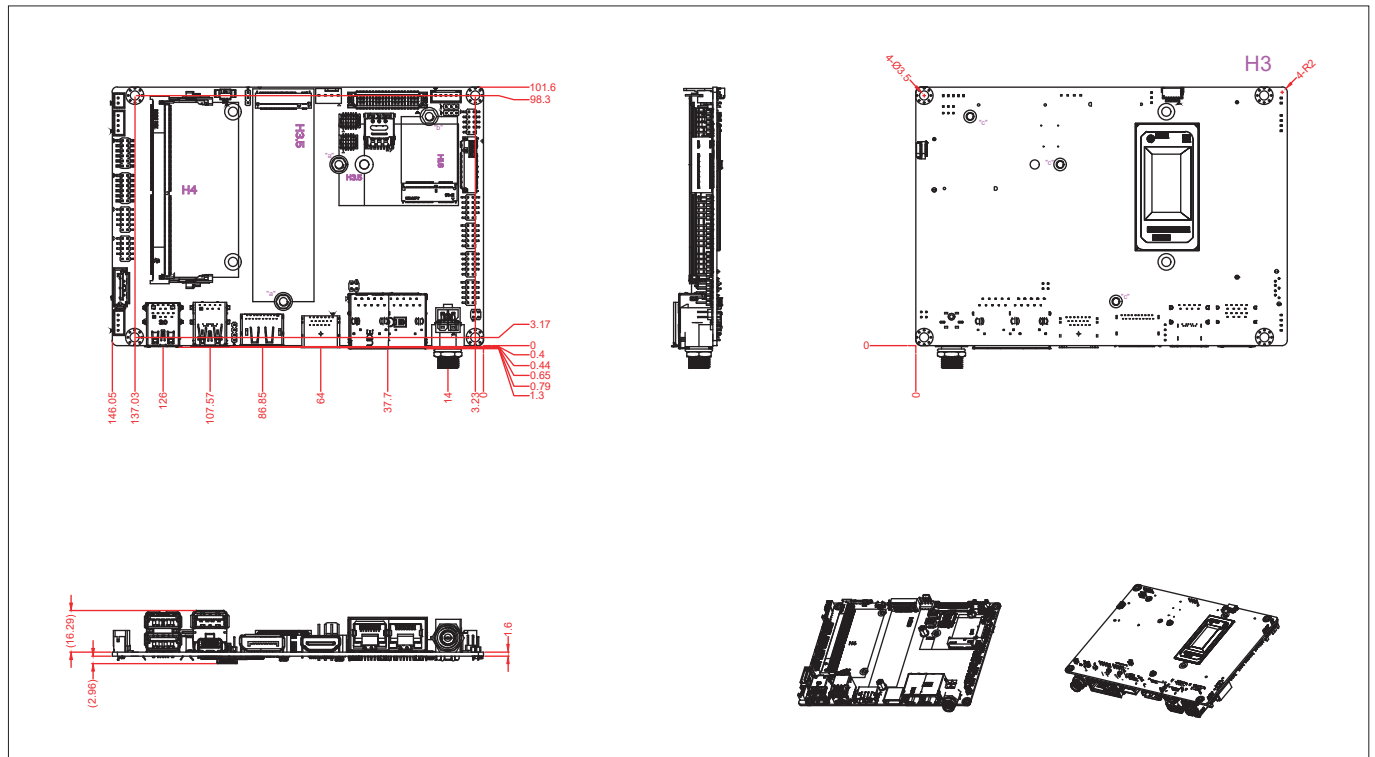
I/O

USB	4 x USB 2.0 by pin header 2 x USB 3.2 Gen 2 x1 at rear I/O 1 x USB 3.2 Gen 1x1 at rear I/O + 1 x USB Type-C 5V 3A at I/O (with USB 3.2 Gen 2x2 & DP 1.4a signal display output)
COM Port	2 x RS-232, 2 x RS-232/422/485
SATA	1x SATA III
DIO	1x 8-bit GPIO
MIO	1x eSPI 1x BIOS SPI 1x SIM Card Slot

Mechanical & Environmental

Operating Temp.	0°C ~ 60°C (32°F ~ 140°F) with 0.5m/s air flow
Storage Temp.	-40°C ~ 75°C (-40°F ~ 167°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Weight	0.44lbs (0.2kg)
Power Requirement	DC in +12V ~ +24V
Dimension (L x W)	5.7" x 4" (146mm x 101mm)

Mechanical Drawing



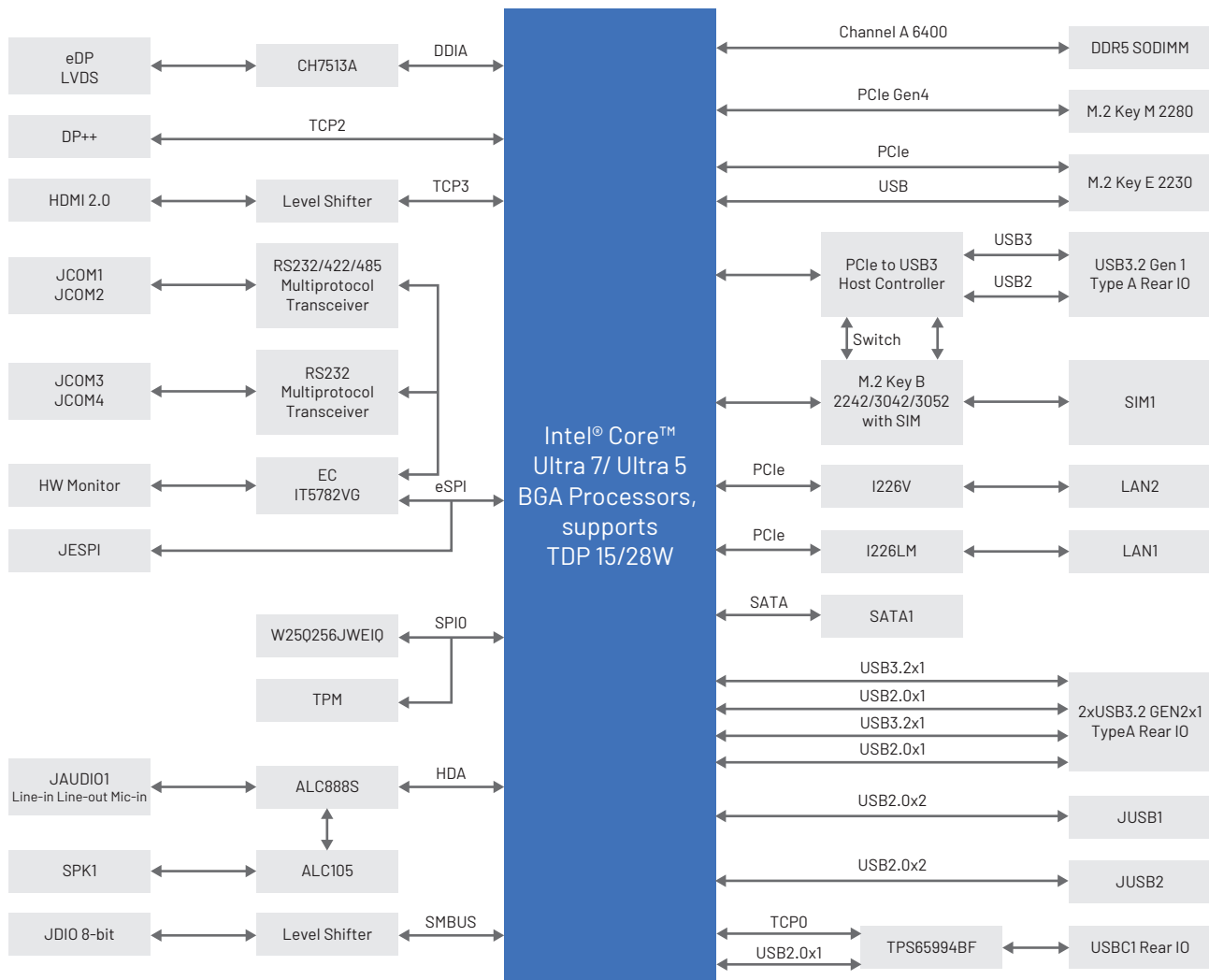
Ordering Information

P/N	Processor	Chipset	LAN	USB	COM	PCIe Slot	Power Input	Temp.	Note
ECM-ARL-225U-A1R	Intel® Core™ Ultra 5 Processor 225U	NA	2	8	4	0	+12 ~ 24V DC	0°C ~ 60°C (32°F ~ 140°F)	NA
ECM-ARL-225H-A1R	Intel® Core™ Ultra 5 Processor 225H	NA	2	8	4	0	+12 ~ 24V DC	0°C ~ 60°C (32°F ~ 140°F)	NA

Packing List

Item	Quantity
Serial ATA cable (7-pin, standard)	1
Wire SATA power cable (15-pin, 4P/2.0mm)	1
Flat cable 9P (M)-PHD 10P/2.0mm)	1
CPU Heatsink/Cooler	1
M.2 Screws	3
Graphene sheet	1

Block Diagram



I/O Overview

