



ECM-EHL3

Intel® Elkhart Lake 3.5" Micro Module

- > Bottom Layer Soldered Processor
- > Single DRAM Socket, Max, Up to 32GB DDR4 3200MTs (non-ECC Supported)
- > Triple Display, 2 x DP++, 1 x 2CH LVDS (share with eDP, default LVDS)
- > Triple Expansion Slot, M.2 Key-B, M.2 Key-E, M.2 Key-M
- > Three Gigabit Ethernet, 1 x 2.5GbE, 2 x 1GbE
- > Wide DC-Input, +9~36Vdc

+ Spec

-System Information-

Processor	Onboard Intel® Pentium®/Celeron®/Atom™ SoC BGA Processor (Elkhart Lake Platform 4.5~12W)- (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)
Platform Controller Hub	Elkhart lake SoC integrated
System Memory	Single 260-pin DDR4 SODIMM Socket, Supports Up to 32GB DDR4 3200MTs SDRAM
I/O Chipset	EC ITE IT571
BIOS Information	AMI BIOS, 256Mbit SPI Flash ROM
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec and 1sec. or 1min./step
H/W Status Monitor	CPU & system temperature monitoring Voltages monitoring
TPM	On board NuvoTon NPCT754AADYX support TPM 2.0

Expansion

Expansion	1 x M.2 Key E 2230 support WiFi module (PCI-e x1 & USB 2.0 Signal) 1 x M.2 Key B 3042/2242, standard package with 3042 to 3052 bracket + screw set (with SATA and USB3.0/USB2.0, with 1 x SIM card slot, support WWAN+GNSS or SSD) 1 x M.2 Key M support 2260 slot, standard package with 2260 to 2242 bracket + screw set (with 1 x PCI-e x1 signal)
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Storage

Storage	1 x M.2 (Key-B) 1 x M.2 (Key-M) 1 x SATA III
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I/O

USB Port	2 x USB 3.1 Gen2, 2 x USB2.0 at I/O 4 x USB2.0 by pin header
COM Port	2 x RS-232/422/485 4 x RS232
SATA	1 x SATA III
DIO	1 x 8-bit GPIO
MIO	1 x eSPI
Other	3 x LAN

Display

Graphic Chipset	Intel® UHD Graphics
Spec. & Resolution	DP++ Max resolution 4096x2160@60Hz LVDS Max resolution 1920 x 1080 Dual channel 18/24-bits eDP1.3 Max resolution 4096x2160@60Hz
Multiple Display	Triple Display
LVDS	1 x LVDS: 1920 x 1080 Dual channel 18/24-bits LVDS (Chrontel CH7511B-BFI eDP to LVDS)share with eDP by switch IC, default LVDS

Audio

Audio Codec	Realtek ALC888S
Audio Interface	Line-out, Line-in, Mic-in
Audio Amplifier	3W Amplifier

Certifications

Certification Information	CE FCC Class B
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Ethernet

LAN Chipset	Intel® I226LM, I210AT
Ethernet Interface	1 x 10/100/1000/2.5G Base-Tx GbE compatible 2x 10/100/1000 Base-Tx GbE compatible
LAN Port	3 x RJ-45

Mechanical & Environmental

Operating Temperature	0°C ~ 60°C with 0.5m/s air flow
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Storage Temperature	-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 +9V ~ +36V
ACPI	Single power ATX Support S0,S3, S4, S5 ACPI 5.0 Compliant
Power Mode	AT/ATX (Default Setting: AT)
Dimension (L x W)	5.7" x 4" (146mm x 101mm)
Software Support	
OS Information	Win 10 Linux
Ordering Information	
Ordering Information	ECM-EHL3-J6412-A1R ECM-EHL3/J6412/1SATA/6COM/8USB/3LAN/A1 ECM-EHL3-J6413-A1R ECM-EHL3/J6413/1SATA/6COM/8USB/3LAN/A1 ECM-EHL3-X13E-A1R ECM-EHL3/X6413E/1SATA/6COM/8USB/3LAN/A1 ECM-EHL3-X25RE-A1R ECM-EHL3/X6425RE/1SATA/6COM/8USB/3LAN/A1