

EMS-EHL-USB

**Intel® Elkhart Lake Atom®/Celeron®
Processor Fanless Rugged Embedded System,
w_USB IET Module**



Product Features

- Intel® Celeron®/Atom™ J6413/x6425E SoC BGA Processor
- Rich I/O, 8-USB3.2, 3-USB2.0, 1-DP, 1-HDMI, 2-COM, 2-LAN, 1-8bit GPIO
- Fanless operation temperature from -40°C ~ 70°C (WT) / 0°C ~ 65°C (ST)
- Wide range DC power input from +9~36V
- Support IET modules
- 1 x 260-pin SODIMM socket Max. up to 32GB DDR4 3200MT/s
- Support 5G (Sub-6G) module, HDMI 2.0b (4K @ 60Hz), LAN 2.5G Base-Tx GbE
- CE, FCC Class B, LVD 62368-1, IP50
- Support HW TPM 2.0

Specification

System Information

Processor	Intel® Celeron® Processor J6413 (1.5M Cache, up to 3.00Ghz), ST, Tj=105°C Intel® Atom® Processor x6425E(1.5M Cache, up to 3.00Ghz), WT, Tj=-40°C ~105°C
System Memory	1 x 260-pin SODIMM socket Max. Up to 32GB DDR4 3200 MT/s
Watchdog Timer	H/W Reset, 1sec. ~ 65535sec.
H/W Status Monitor	CPU & system temperature monitoring and Voltages monitoring
TPM	TPM 2.0
SBC	EBM-EHLS

Expansion

M.2	1 x M.2 Key-B 2242/3042/3052 support SATA3/ PCIe III/ USB3.2 Gen.1 and SIM slot1 (internal), default support 3.3V, jumper setting to adjust 3.3V/ 3.8V 1 x M.2 Key-E 2230 for Wi-Fi & BT Module (USB2.0/ PCIe III)
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Storage

M.2	1 x M.2 Key-B 2242/2280, support SATA
	1 x M.2 Key-B 2242, support SATA (share with expansion slot)

Rear I/O

USB	3 x USB 2.0
	6 x USB 3.1 Gen.1 (5Gbp/s), via USB Hub
	2 x USB 3.1 Gen.2 (10Gbp/s)

LAN Port	2 x RJ45
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Audio	1 x Mic-In, 1 x Line-Out
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DP	1 x DP 1.4
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HDMI	1 x HDMI 2.0b
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Antenna	2 x Antenna with dust cover
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Right I/O

Antenna	2 x Antenna with dust cover
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Left I/O

Antenna	2 x Antenna with dust cover
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Display

Graphic Chipset	Intel® UHD Graphics for 10th Gen Intel® Processors
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Resolution	DP++ 1.4: 4096x2304 @ 60Hz
	HDMI 2.0b : Max. resolution 4096x2304 @ 60Hz

Audio

Audio Codec	Realtek ALC888S (co-lay with ALC897) HD codec
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Ethernet

LAN Chipset	2 x Intel I226-IT
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Specification	2 x 10/100/1000/2.5G Base-Tx GbE compatible
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Power Requirement

ACPI	Single power ATX Support S0,S3, S4, S5
	ACPI 5.0 Compliant

Power Mode	AT/ATX (ATX is default setting)
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Software Support

OS	Win 10 64bit / Win 11 64 bit/ Linux
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Certification

Certification Information	CE, FCC Class B, LVD 62368-1
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Mechanical & Environmental

Operating Temp.	-40°C ~ 70°C (w/SSD) ambient w/ 0.5 air flow, WT sku, x6425E -40°C ~ 60°C (w/SSD) ambient w/ 0.2 air flow, WT sku, x6425E 0°C ~ 65°C (w/SSD) ambient w/ 0.5 air flow, ST sku, J6413 0°C ~ 55°C (w/SSD) ambient w/ 0.2 air flow, ST sku, J6413
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Storage Temp.	-30°C ~ 70°C (-22°F ~ 158°F)
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Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
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Dimension (W x L x H)	240mm x 150mm x 64 mm (w/ IET module)
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Weight	1.9 kg (System) 2.7 kg (w_Package)
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Vibration Test	With SSD : 5Grms, IEC 60068-2-64, Random, 5 ~ 500Hz, 1hr/axis
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Shock Test	With SSD : 55Grms, IEC 60068-2-27, Half Sine, 11ms
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IP Rating	IP 50
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Mounting Kit	Wall mount kit (standard) DIN RAIL (optional)
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Ordering Information

Ordering Information	Intel® Elkhart Lake Atom®/Celeron® Processor Fanless Rugged Embedded System, w_USB IET Module EMS-EHL-X64-A1-8R (x6425E) EMS-EHL-J64-A1-8R (J6413)
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