



Features

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



Modular Design



5G/ Wi-Fi 6E Available



Vibration/ Shock 5G/55G



ST 0~65°C
WT -40~70°C



Wide-DC Input 9~36Vdc

Specifications

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

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)
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Front I/O

Power Button	1 x Push Button for Power on/off
Reset Button	1 x Push Button for Reset
LED Indicator	1 x Power LED (Blue) 1 x Storage LED (Yellow) - M.2 B-key SATA 1 x LTE LED (Green) - M.2 B-key PCIe 1 x Wifi LED (Green) - M.2 E key

COM Port	2 x COM RS232/422/485 (select via BIOS, auto flow control via HW)
Digital I/O	1 x 8-bit GPIO (DB9)
Wire-Control Power On/Off	1 x 2-Pin Terminal Block for wire-control power on/off
Antenna	2 x Antenna with dust cover

Rear I/O

USB	2 x USB 3.2 Gen.2 (10Gbp/s) 2 x USB 3.2 Gen.1 (5Gbp/s) 2 x USB 2.0
COM Port	2 x RS232/422/485 (select via BIOS, auto flow control via HW)
LAN Port	4 x RJ45
Audio	1 x Mic-In, 1 x Line-Out
DP	1 x DP++
HDMI	2 x HDMI
Antenna	2 x Antenna with dust cover
AC/DC Input	1 x 3-Pin Terminal Block (V+, V-, GND)

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
Resolution	DP++ : Max. resolution 4096x2304 @ 60Hz HDMI : 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, 2 x Intel® I211-AT
Specification	2 x 10/100/1000/2.5G Base-Tx GbE compatible 2 x 10/100/1000Base-Tx GbE compatible

Power Requirement

Voltage Input Spec.	DC in 12/24V (+9V ~ +36V), wide voltage single power input TVS component for surge protection Reverse current/voltage protection (Max. Currency: 13A)
Voltage Input Connector	3-Pin Terminal Block (V+, V-, GND)
ACPI	Single power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
Power Mode	AT/ATX (ATX is default setting)

Software Support

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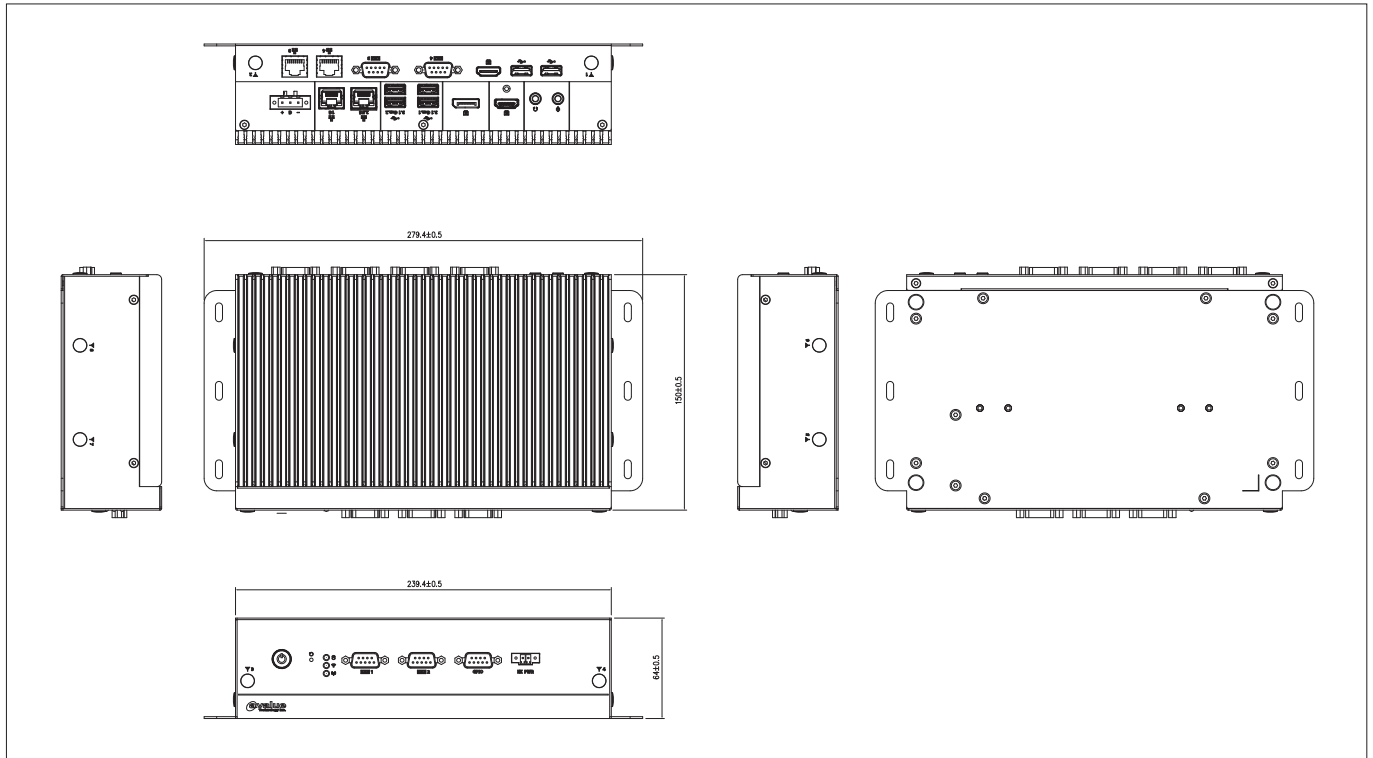
Certification

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

Mechanical Drawing



Ordering Information

P/N	Processor	Chipset	Memory	Storage	Adapter/ PSU	Mounting Kit	Temp.
EMS-EHL-J64-A1-6R	Intel® Celeron® J6413 Processor	N/A	4GB DDR4 (Up to 32G Optional)	(Optional)	60W Adapter (Optional)	Wall Mount (Din Rail Optional)	0°C ~ 65°C
EMS-EHL-X64-A1-6R	Intel® Atom® x6425E Processor	N/A	4GB DDR4 (Up to 32G Optional)	(Optional)	60W Adapter (Optional)	Wall Mount (Din Rail Optional)	-40°C ~ 70°C

Packing List

Item	Quantity
EMS-EHL Intel® Elkhart Lake Celeron®/Atom® Processor Fanless Rugged Embedded System, w/HDMI IET Module	1
Terminal block to lockable DC Jack cable	1
DP to VGA Converter	1
Wire tie for HDMI	1
Screw driver for chassis	1
Screw Kits for Peripheral	1

Optional Items

Item	P/N
AC/DC adapter 12V/5A 90 Screw Type	ACC-ADP-060N-14R ACC-ADP-060N-08R
Power Cord 3P (F)-3P (M) 183cm, USA type	E1702031833R
Power Cord SL-6+SL-3 183cm, EU type	E1702031000R
Power Cord 3P (F)-3P (M) 183cm, Japan w/PSE type	E1702031834R
Power Cord QP-026+SL-3 183cm, UK type	E170P060380R
Power Cord 3P (F)-3P (M) 183cm, Australia type	E1702031831R
Din Rail Kit	-

I/O Overview

