

Robust Edge AIoT Platform Catalog

Cocreate an Intelligent World



Cocreate an Intelligent World



About ASRock Industrial

ASRock Industrial Computer Corporation, established as an independent entity in July 2018, is a prominent industry player specializing in the development of motherboards, edge computers, and related solutions for the manufacturing, business, and retail sectors. As the world-leading provider of Industrial PC motherboards, our customers base spans the globe. Previously, it had been a business unit of ASRock Inc. (est. 2002) which was set up in 2011. ASRock Industrial now operates autonomously, allowing us to devote all resources to delivering exceptional B2B solutions.

Our vision is to cocreate an intelligent world, aligning with ASRock Industrial's core dedication to CARES (Commerce/Automation/Robot/Entertainment/Security) industries. With a central R&D design team comprising nearly 53% of our total staff, ASRock Industrial has the resources and expertise to develop cutting-edge, reliable products tailored to meet your business requirements. Our product portfolio encompasses both off-the-shelf offerings and customized solutions catered to the specific needs of OEMs/ODMs.

Business Alliances

ASRock Industrial partners with world-class technology and business vendors, partners, and organizations to co-develop advanced, reliable products with optimal AIoT solutions.



Preliminary

iEPF-9030S-EW4

Expandable Edge AIoT Platform

Expansion Slot

PCIe	1 x PCIe Gen5 x16 (single x16 or dual x8), PCIe x16 slot with default power cable can support up to 180W graphic card (275mm x 111.15 mm x 60 mm (L x H x D), if remove the card holder, it can be limited on 275mm x 124mm x 60 mm) Graphic card can be up to 600W with optional VGA module 1 x PCIe Gen5 x8 (shared with dual x8) 2 x PCIe Gen4 x4
RF& Antenna	8 x SMA connector hole reserved
M.2	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B1, 2280/3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 and USB2.0 for 4G / 5G 1 x M.2 (Key B2, 3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 and USB2.0 for 4G / 5G
SIM Socket	2 x Nano SIM Card slot (2 connected to M.2 Key B)

Ethernet

Controller/ Speed	3 x Intel® i226IT (1 vPro Support) 2 x Intel® i226IT (PoE Support, each port supports IEEE 802.3AT PoE, PoE output max. 30W/single port or 30W/two ports shared)
Connector	5 x RJ45

Storage

M.2	1 x M.2 (Key M1, 2242/2260/2280/22110/25110) with Gen4 x4 for NVMe SSD 1 x M.2 (Key M2, 2242/2280/22110/25110) with Gen3 x4 for NVMe SSD
SATA	4 x SATA3 (6Gb/s), support RAID 0/1/5/10 4 x 2.5" HDD/SSD Tray
CFast (Option)	1 x Type II socket (Shared with SATA3)

Front I/O

DisplayPort	1
HDMI	1
VGA	1
Ethernet	5 x Intel 2.5G LAN
USB	6 x USB 3.2 Gen2x1, 1 x USB2.0 internal connector w/ lock function
Audio	1 x Mic-in, 1 x Line-out
COM	4 x RS232/422/485 (COM1, COM2- optional Card w/ Isolation Protection, COM5- Isolation Protection, COM6)
DIO	2 x RS232 (COM3, COM4) 8DI/8DOs

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	9V-36V VDC with Ignition control and remote power on/off switch, 80V Surge Protection, OVP, UVP, OCP and reverse protection Ignition Power Input w/ 13-mode condition
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Environment

Operating Temperature	35W CPU: -40°C~75°C (-40°F~167°F) 46W~65W CPU: -40°C~55°C (-40°F~131°F) (with FAN inside, without Add-on Card) (w/ air flow 0.5~0.8 m/s)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Shock	Operating: 50 G, half sine 11ms duration with SSD
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-4kV, Air +/-8kV
EMC	EN61000-6-4/-2, CE & FCC Class A
Safety	LVD

Mechanical

Construction	Aluminum heatsink + Metal chassis
Mounting	Desk Mount
Dimensions	202mm(W)x290mm(D)x209.3mm(H)(7.95" x 11.42" x 8.24")
Net Weight	10kg

Others

OS Support	Windows 10 & Linux
TPM	TPM 2.0
Real-Time Enablement	TSN, TCC support under YOCTO



KEY FEATURES

- Intel® 14th Gen Core™ Processors with R680E Chipset
- 2 x 262-pin DDR5 SO-DIMM up to 96GB (48GB per DIMM)
- 1 x PCIe x16 (Up to PCIe Gen5) or 2 x PCIe x8 (Up to PCIe Gen5),
2 x PCIe x4 (PCIe Gen4)
- 2 x M.2 Key M, 2 x M.2 Key B, 1 x M.2 Key E
- 6 x USB 3.2 Gen2x1, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 5 x Intel 2.5G LAN (2 support PoE, 1 supports vPro)
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA
- Powerful Edge AI acceleration enabled by the most flexible mechanical, thermal, and power design, with support for 275mm x 124 mm x 60 mm (L x H x D) max. and up to 600W graphic card

SPECIFICATIONS

Processor System

CPU	Intel® 14 th Gen Core™ Processors
Chipset	Intel® R680E
Socket	LGA 1700

Memory

Technology	Dual Channel DDR5 5600MHz (ECC memory supported by R680E + Selected CPU)
Capacity	96 GB (48GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz

Audio

Interface	Realtek ALC897, High Definition Audio.
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iEP-9030E

Compact Edge AIoT Platform



Expansion Slot

RF& Antenna	8 x SMA connector hole reserved
M.2	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B1, 2280/3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 and USB2.0 for 4G / 5G 1 x M.2 (Key B2, 3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 and USB2.0 for 4G / 5G
SIM Socket	2 x Nano SIM Card slot (2 connected to M.2 Key B)

Ethernet

Controller/ Speed	3 x Intel® i226IT (1 vPro Support) 2 x Intel® i226IT (PoE Support, each port supports IEEE 802.3AT PoE, PoE output max.30W/single port or 30W/two ports shared)
Connector	5 x RJ45

Storage

M.2	1 x M.2 (Key M1, 2242/2260/2280/22110/25110) with Gen4x4 for NVMe SSD 1 x M.2 (Key M2, 2242/2280/22110/25110) with Gen3 x4 for NVMe SSD
SATA	4 x SATA3 (6Gb/s), support RAID 0/1/5/10 4 x 2.5" HDD/SSD Tray
CFast (Option)	1 x Type II socket (Shared with SATA3)

KEY FEATURES

- Intel® 14th Gen Core™ Processors with R680E Chipset
- 2 x 262-pin DDR5 SO-DIMM up to 96GB (48GB per DIMM)
- 2 x M.2 Key M, 2 x M.2 Key B, 1 x M.2 Key E
- 6 x USB 3.2 Gen2x1, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 5 x Intel 2.5G LAN (2 support PoE, 1 supports vPro)
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA

Rear I/O

DisplayPort	1
HDMI	1
VGA	1
Ethernet	5 x Intel 2.5G LAN
USB	6 x USB 3.2 Gen2x1, 1 x USB2.0 internal connector w/ lock function
Audio	1 x Mic-in, 1 x Line-out
COM	4 x RS232/422/485 (COM1, COM2- optional Card w/ Isolation Protection, COM5- Isolation Protection, COM6) 2 x RS232 (COM3, COM4)
DIO	8DI/8DOs

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	9V-36V VDC with Ignition control and remote power on/off switch. 80V Surge Protection, OVP, UVP, OCP and reverse protection Ignition Power Input w/ 13-mode condition
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Environment

Operating Temperature	35W CPU: -40°C~70°C (-40°F~158°F) 46W~65W CPU: -40°C~50°C (-40°F~122°F) (w/ air flow 0.5~0.8 m/s)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Shock	Operating: 50G, half sine 11ms duration with SSD
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-4kV, Air +/-8kV
EMC	EN61000-6-4/-2, CE & FCC Class A
Safety	LVD

Mechanical

Construction	Aluminum heatsink + Metal chassis
Mounting	Desk Mount
Dimensions	202mm (W) x 244mm (D) x 108.7mm (H) (7.95" x 9.61" x 4.28")
Net Weight	6.5kg

Others

OS Support	Windows 10 & Linux
TPM	TPM 2.0
Real-Time Enablement	TSN, TCC support under YOCTO

SPECIFICATIONS

Processor System

CPU	Intel® 14 th Gen Core™ Processors
Chipset	Intel® R680E
Socket	LGA 1700

Memory

Technology	Dual Channel DDR5 5600MHz (ECC memory supported by R680E + Selected CPU)
Capacity	96 GB (48 GB per DIMM)
Socket	2 x 262-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz

Audio

Interface	Realtek ALC897, High Definition Audio.
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iEPF-9020S-EY4

Expandable Edge AIoT Platform



KEY FEATURES

- Intel® 13th Gen Core™ Processors with R680E Chipset
- 4 x 260-pin DDR4 SO-DIMM up to 128GB (32GB per DIMM)
- 1 x PCIe x16 (PCIe Gen4) or 2 x PCIe x8 (PCIe Gen4), 2 x PCIe x4 (PCIe Gen4)
- 1 x M.2 Key M, 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 6 x USB 3.2 Gen2x1, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 5 x Intel 2.5G LAN (2 support PoE, 1 supports vPro)
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA
- Powerful Edge AI acceleration enabled by the most flexible mechanical, thermal, and power design, with support for 275mm x 124 mm x 60 mm (L x H x D) max. and up to 300W graphic card

SPECIFICATIONS

Processor System

CPU	Intel® 13th Gen Core™ Processors
Chipset	Intel® R680E
Socket	LGA 1700

Memory

Technology	Dual Channel DDR4 2933MHz (ECC memory supported by R680E + Selected CPU)
Capacity	128 GB (32 GB per DIMM)
Socket	4 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz

Expansion Slot

PCIe	1 x PCIe Gen4 x16 (single x16 or dual x8), PCIe x16 slot with default power cable can support up to 180W graphic card (275mm x 111.15 mm x 60 mm (L x H x D), if remove the card holder, it can be limited on 275mm x 124mm x 60 mm) Graphic card can be up to 300W with optional VGA module 1 x PCIe Gen4 x8 (shared with dual x8) 2 x PCIe Gen4 x4
Mini-PCIe	2 x Full/Half size with PCIe Gen3 x1 and USB 2.0
RF& Antenna	8 x SMA connector hole reserved
M.2	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B, 2280/3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 for 4G / 5G
SIM Socket	2 x Nano SIM Card slot (1 connected to Mini PCIe, 1 connected to M.2 Key B)

Audio

Interface	Realtek ALC897, High Definition Audio.
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Ethernet

Controller/ Speed	5 x Intel 2.5G LAN (2 support PoE, each port supports IEEE 802.3AF PoE, PoE output max:15.4W/port), (1 supports vPro)
Connector	5 x RJ45

Storage

M.2	1 x M.2 (Key M, 2280) with Gen4/Gen3 x4 for NVMe SSD
SATA	4 x SATA3 (6Gb/s), support RAID 0/1/5/10 4 x 2.5" HDD/SSD Tray
CFast (Option)	1 x Type II socket (Shared with SATA3)

Front I/O

DisplayPort	1
HDMI	1
VGA	1
Ethernet	5 x 2.5G LAN
USB	6 x USB 3.2 Gen2x1, 1 x USB2.0 internal connector w/ lock function
Audio	1 x Mic-in, 1 x Line-out
COM	4 x RS232/422/485 2 x RS232
DIO	8DI/8DOs

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	9V~36V VDC with Ignition control and remote power on/off switch. 80V Surge Protection, OVP, UVP, OCP and reverse protection Ignition Power Input w/ 13-mode condition
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Environment

Operating Temperature	35W CPU: -40°C~75°C (-40°F~167°F) 46W~65W CPU: -40°C~55°C (-40°F~131°F) (with FAN inside, without Add-on Card) (w/ air flow 0.5~0.8 m/s)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Shock	Operating: 50 G, half sine 11ms duration with SSD
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-4kV, Air +/-8kV
EMC	EN61000-6-4/-2, CE & FCC Class A
Safety	LVD

Mechanical

Construction	Aluminum heatsink + Metal chassis
Mounting	Desk Mount
Dimensions	202mm (W) x 290mm (D) x 209.3mm (H) (7.95" x 11.42" x 8.24")
Net Weight	10kg

Others

OS Support	Windows 10 & Linux
TPM	TPM 2.0
Real-Time Enablement	TSN, TCC support under YOCTO

iEP-9020E

Compact Edge AIoT Platform



KEY FEATURES

- Intel® 13th Gen Core™ Processors with R680E Chipset
- 4 x 260-pin DDR4 SO-DIMM up to 128GB (32GB per DIMM)
- 1 x M.2 Key M, 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 6 x USB 3.2 Gen2x1, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 5 x Intel 2.5G LAN (2 support PoE, 1 supports vPro)
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA

SPECIFICATIONS

Processor System

CPU	Intel® 13th Gen Core™ Processors
Chipset	Intel® R680E
Socket	LGA 1700

Memory

Technology	Dual Channel DDR4 2933MHz (ECC memory supported by R680E + Selected CPU)
Capacity	128 GB (32 GB per DIMM)
Socket	4 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz

Expansion Slot

Mini-PCIe	2 x Full/Half size with PCIe Gen3 x1 and USB 2.0
RF & Antenna	8 x SMA connector hole reserved
M.2	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B, 2280/3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 for 4G / 5G
SIM Socket	2 x Nano SIM Card slot (1 connected to Mini PCIe, 1 connected to M.2 Key B)

Audio

Interface	Realtek ALC897, High Definition Audio.
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Ethernet

Controller/ Speed	5 x Intel 2.5G LAN(2 support PoE, each port supports IEEE 802.3AF PoE, PoE output max.15.4W/port), (1 supports vPro)
Connector	5 x RJ45

Storage

M.2	1 x M.2 (Key M, 2280) with Gen4/Gen3 x4 for NVMe SSD
SATA	4 x SATA3 (6Gb/s), support RAID 0/1/5/10 4 x 2.5" HDD/SSD Tray
CFast (Option)	1 x Type II socket (Shared with SATA3)

Front I/O

DisplayPort	1
HDMI	1
VGA	1
Ethernet	5 x 2.5G LAN
USB	6 x USB 3.2 Gen2x1, 1 x USB2.0 internal connector w/ lock function
Audio	1 x Mic-in, 1 x Line-out
COM	4 x RS232/422/485 2 x RS232
DIO	8DIs/8DOs

Watchdog Timer

Output Interval	From Super I/O to drag RESETCON# 256 Segments, 0, 1, 2, ...255sec
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Power Requirements

Input PWR	9V-36V VDC with Ignition control and remote power on/off switch. 80V Surge Protection, OVP, UVP, OCP and reverse protection Ignition Power Input w/ 13-mode condition
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Environment

Operating Temperature	35W CPU: -40°C-70°C (-40°F-158°F) 46W-65W CPU: -40°C-50°C (-40°F-122°F) (w/ air flow 0.5-0.8 m/s)
Storage Temperature	-40°C-85°C (-40°F-185°F)
Humidity	~95% @ 40°C (non-condensing)
Shock	Operating: 50G, half sine 11ms duration with SSD
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-4kV, Air +/-8kV
EMC	EN61000-6-4/-2, CE & FCC Class A
Safety	LVD

Mechanical

Construction	Aluminum heatsink + Metal chassis
Mounting	Desk Mount
Dimensions	202mm (W) x 244mm (D) x 108.7mm (H) (7.95" x 9.61" x 4.28")
Net Weight	6.5kg

Others

OS Support	Windows 10 & Linux
TPM	TPM 2.0
Real-Time Enablement	TSN, TCC support under YOCTO

iEPF-9010S-EY4, iEPF-9012S-EY4

Expandable Edge AIoT Platform



iEPF-9010S-EY4

iEPF-9012S-EY4

KEY FEATURES

iEPF-9010S-EY4:

- Intel® 12th Gen Core™ Processors with R680E Chipset
- 4 x 260-pin DDR4 SO-DIMM up to 128GB (32GB per DIMM)
- 1 x PCIe x16 (PCIe Gen4) or 2 x PCIe x8 (PCIe Gen4), 2 x PCIe x 4 (PCIe Gen4)
- 1 x M.2 Key M, 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 6 x USB 3.2 Gen2x1
- 5 x Intel 2.5G LAN (2 support PoE, 1 supports vPro)

iEPF-9012S-EY4:

- Intel® 12th Gen Core™ Processors with H610 Chipset
- 2 x 260-pin DDR4 SO-DIMM up to 64GB (32GB per DIMM)
- 1 x PCIe x16 (PCIe Gen4)
- 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 2 x USB 3.2 Gen2x1, 2 x USB 3.2 Gen1x1, 2 x USB 2.0
- 4 x Intel 2.5G LAN (2 support PoE)

iEPF-9010S-EY4, iEPF-9012S-EY4:

- 8 x DI, 8 x DO
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA
- Powerful Edge AI acceleration enabled by the most flexible mechanical, thermal, and power design, with support for 275mm x 124 mm x 60 mm (L x H x D) max. and up to 300W graphic card

SPECIFICATIONS

Processor System	iEPF-9010S-EY4	iEPF-9012S-EY4
CPU	Intel® 12th Gen Core™, Pentium or Celeron Processors	
Chipset	Intel® R680E	Intel® H610
Socket	LGA 1700	

Memory

Technology	Dual Channel DDR4 2933MHz	
ECC Memory Supported	Yes	No
Capacity	128 GB (32 GB per DIMM)	64 GB (32 GB per DIMM)
Socket	4 x 260-pin SO-DIMM	2 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz

Audio

Interface	Realtek ALC897, High Definition Audio.
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Ethernet

Controller/ Speed (iEPF-9010S-EY4)	5 x Intel 2.5G LAN (2 support PoE, each port supports IEEE 802.3AF PoE, PoE output max.15.4W/port), (1 supports vPro)
Controller/ Speed (iEPF-9012S-EY4)	4 x Intel 2.5G LAN (2 support PoE, PoE output max.15.4W/port, each port supports IEEE 802.3AF PoE)
Connector	5 x RJ45 4 x RJ45

Expansion Slot

PCIe (iEPF-9010S-EY4)	1 x PCIe Gen4 x16 (single x16 or dual x8), 1 x PCIe Gen4 x8 (shared with dual x8) 2 x PCIe Gen4 x4
PCIe (iEPF-9012S-EY4)	1 x PCIe Gen4 x16
PCIe	- The PCIe x16 slot locates at the third one from the right hand side - PCIe x16 slot with default power cable can support up to 180W graphic card (275mm x 111.15 mm x 60 mm (L x H x D), if remove the card holder, it can be limited on 275mm x 124mm x 60 mm) Graphic card can be up to 300W with optional VGA module
Mini-PCIe(iEPF-9010S-EY4)	2 x Full/Half size with PCIe Gen3 x1 and USB 2.0
Mini-PCIe(iEPF-9012S-EY4)	1 x Full/Half size with PCIe Gen3 x1 and USB 2.0 1 x Full/Half size with PCIe Gen3 x1
RF & Antenna	8 x SMA connector hole reserved
M.2 (iEPF-9010S-EY4)	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B, 2280/3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 for 4G / 5G
M.2 (iEPF-9012S-EY4)	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B, 2280/3042/3052) with PCIe Gen3 x1 / USB2.0 for 4G / 5G
SIM Socket	2 x Nano SIM Card slot (1 connected to Mini PCIe, 1 connected to M.2 Key B)

Storage

M.2(iEPF-9010S-EY4 only)	1 x M.2 (Key M, 2280) with Gen4/Gen3 x4 for NVMe SSD
SATA	4 x SATA3 (6Gb/s), support RAID 0/1/5/10 4 x SATA3 (6Gb/s)
HDD/SSD Tray	4 x 2.5" HDD/SSD Tray
CFast (Option)	1 x Type II socket (Shared with SATA3)

Front I/O

DisplayPort	1
HDMI	1
VGA	1
Ethernet	5 x 2.5G LAN 4 x 2.5G LAN
USB (iEPF-9010S-EY4)	6 x USB 3.2 Gen2x1 (1 x USB2.0 internal connector w/ lock function)
USB (iEPF-9012S-EY4)	2 x USB 3.2 Gen2x1, 2 x USB 3.2 Gen1x1, 2 x USB 2.0 (1 x USB2.0 internal connector w/ lock function)
Audio	1 x Mic-in, 1 x Line-out
COM	4 x RS232/422/485
DIO	2 x RS232 8 DI/8 DOs

Watchdog Timer

Output	From Super I/O to drag RESETCON#
Interval	256 Segments, 0, 1, 2, ...255sec

Power Requirements

Input PWR	9V-36V VDC with Ignition control and remote power on/off switch. 80V Surge Protection, OVP, UVP, OCP and reverse protection Ignition Power Input w/ 13-mode condition
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Environment

Operating Temperature	35W CPU: -40°C-75°C (-40°F-167°F) 46W-65W CPU: -40°C-55°C (-40°F-131°F) (with FAN inside, without Add-on Card) (w/ air flow 0.5-0.8 m/s)
Storage Temperature	-40°C-85°C (-40°F-185°F)
Humidity	~95% @ 40°C (non-condensing)
Shock	Operating: 50 G, half sine 11ms duration with SSD
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-4kV, Air +/-8kV
EMC	EN61000-6-4/-2, CE & FCC Class A
Safety	LVD

Mechanical

Construction	Aluminum heatsink + Metal chassis
Mounting	Desk Mount
Dimensions	202mm (W) x 290mm (D) x 209.3mm (H)
Net Weight	10kg

Others

OS Support	Windows 10 & Linux
SW Support	ACRN (https://projectacrn.org/) No
TPM	TPM 2.0
Real-Time Enablement (iEPF-9010S-EY4 only)	TSN, TCC support under YOCTO

iEP-9010E, iEP-9012E

Compact Edge AIoT Platform



iEP-9010E

iEP-9012E

KEY FEATURES

iEP-9010E :

- Intel® 12th Gen Core™ Processors with R680E Chipset
- 4 x 260-pin DDR4 SO-DIMM up to 128GB (32GB per DIMM)
- 1 x M.2 Key M, 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 6 x USB 3.2 Gen2x1, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 5 x Intel 2.5G LAN (2 support PoE, 1 supports vPro)
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA

iEP-9012E :

- Intel® 12th Gen Core™ Processors with H610 Chipset
- 2 x 260-pin DDR4 SO-DIMM up to 64GB (32GB per DIMM)
- 1 x M.2 Key B, 1 x M.2 Key E, 2 x Mini PCIe
- 2 x USB 3.2 Gen2x1, 2 x USB 3.2 Gen1x1, 2 x USB 2.0, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 4 x Intel 2.5G LAN (2 support PoE)
- 1 x Displayport, 1 x HDMI 2.0b, 1 x VGA

SPECIFICATIONS

Processor System	iEP-9010E	iEP-9012E
CPU	Intel® 12th Gen Core™, Pentium or Celeron Processors	
Chipset	Intel® R680E	Intel® H610
Socket	LGA 1700	

Memory

Technology	Dual Channel DDR4 2933MHz	
ECC Memory Supported	Yes	No
Capacity	128 GB (32 GB per DIMM)	64 GB (32 GB per DIMM)
Socket	4 x 260-pin SO-DIMM	

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4a, DP++ Max resolution up to 4096x2160@60Hz
HDMI	HDMI 2.0b Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz

Audio

Interface	Realtek ALC897, High Definition Audio.
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Ethernet

Controller/ Speed (iEP-9010E)	5 x Intel 2.5G LAN(2 support PoE, each port supports IEEE 802.3AF PoE, PoE output max.15.4W/port), (1 supports vPro)	
Controller/ Speed (iEP-9012E)	4 x Intel 2.5G LAN (2 support PoE, each port supports IEEE 802.3AF PoE, PoE output max.15.4W/port)	
Connector	5 x RJ45	4 x RJ45

Expansion Slot

Mini-PCIe (iEP-9010E)	2 x Full/Half size with PCIe Gen3 x1 and USB 2.0
Mini-PCIe (iEP-9012E)	1 x Full/Half size with PCIe Gen3 x1 and USB 2.0
RF& Antenna	1 x Full/Half size with PCIe Gen3 x1
M.2 (iEP-9010E)	8 x SMA connector hole reserved 1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B, 2280/3042/3052) with PCIe Gen3 x1 / USB3.2 Gen1x1 for 4G / 5G
M.2 (iEP-9012E)	1 x M.2 (Key E, 2230) with CNVI/PCIe Gen3 x1 and USB2.0 for Wi-Fi/BT module 1 x M.2 (Key B, 2280/3042/3052) with PCIe Gen3 x1 / USB2.0 for 4G / 5G
SIM Socket	2 x Nano SIM Card slot (1 connected to Mini PCIe, 1 connected to M.2 Key B)

Storage

M.2 (iEP-9010E only)	1 x M.2 (Key M, 2280) with Gen4/Gen3 x4 for NVMe SSD
SATA	4 x SATA3 (6Gb/s), support RAID 0/1/5/10 4 x SATA3 (6Gb/s)
HDD/SSD Tray	4 x 2.5" HDD/SSD Tray
CFast (Option)	1 x Type II socket (Shared with SATA3)

Front I/O

DisplayPort	1	
HDMI	1	
VGA	1	
Ethernet	5 x 2.5G LAN	4 x 2.5G LAN
USB	6 x USB 3.2 Gen2x1 (1 x USB2.0 internal connector w/ lock function)	2 x USB 3.2 Gen2x1, 2 x USB 3.2 Gen1x1, 2 x USB 2.0 (1 x USB2.0 internal connector w/ lock function)
Audio	1 x Mic-in, 1 x Line-out	
COM	4 x RS232/422/485 2 x RS232	
DIO	8DIs/8DOs	

Watchdog Timer

Output Interval	From Super I/O to drag RESETCON# 256 Segments, 0, 1, 2, ...255sec
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Power Requirements

Input PWR	9V~36V VDC with Ignition control and remote power on/off switch. 80V Surge Protection, OVP, UVP, OCP and reverse protection Ignition Power Input w/ 13-mode condition
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Environment

Operating Temperature	35W CPU: -40°C~70°C (-40°F~158°F) 46W~65W CPU: -40°C~50°C (-40°F~122°F) (w/ air flow 0.5~0.8 m/s)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Shock	Operating: 50G, half sine 11ms duration with SSD
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-4kV, Air +/-8kV
EMC	EN61000-6-4/-2, CE & FCC Class A
Safety	LVD

Mechanical

Construction	Aluminum heatsink + Metal chassis
Mounting	Desk Mount
Dimensions	202mm(W) x 244mm(D) x 108.7mm(H)
Net Weight	6.5kg

Others

OS Support	Windows 10 & Linux
SW Support	ACRN (https://projectacrn.org/) No
TPM	TPM 2.0
Real-Time Enablement (iEP-9010E only)	TSN, TCC support under YOCTO

Coming soon

iEP-7030E Series

Industrial IoT Controller

Preliminary

KEY FEATURES

- Intel® Core™ Ultra Processor (Meteor Lake-U/H Platform)
- Scalable power and performance in BGA for edge controller
- High Performance New Intel® Xe LPG Graphics Architectures
- New integrated NPU for Dedicated AI Acceleration
- Fan-less and Rugged Design
- 0°C to 70°C Operating Temperature for Basic/5LAN/5G SKU
- 0°C to 50°C Operating Temperature for PoE SKU
- 9-36VDC Wide Range Power Inputs for Basic/5LAN/5G SKU
- 19-36VDC Wide Range Power Inputs for PoE SKU
- 3 x Intel i226-IT LAN (One support vPro)
- 2 x Intel i210-AT LAN (Support IEEE 802.3AF PoE)
- Support Intel® IN-Band ECC

SPECIFICATIONS

System Core

Processor	Intel® Core™ Ultra 7/5 processor (Meteor Lake-U/H)
Video	1 x DP++ 1.4a, 1 x VGA
Memory	2 x DDR5 5600MHz SO-DIMM, up to 96GB (Support In-Band ECC)

I/O Interface

Ethernet	3 x Intel® i226-IT (One Support vPro) 2 x Intel® I210-AT for PoE SKU/5LAN SKU
PoE (Option)	2 x Intel® i210AT, each port supports IEEE 802.3AF PoE for PoE SKU only
Serial Port	4 x RS232/422/485
USB	3 x USB 3.2 Gen2x1 1 x USB 2.0
Proprietary IO	8DI/8DOs, support for 5G SKU
Audio	1 x Line Out, 1 x Mic In

Expansion

SIM	1 x Nano SIM Card slot
RF& Antenna (Option)	7 x SMA connector hole reserved, support for Basic/5G SKU 5 x SMA connector hole reserved, support for PoE/5LAN SKU
M.2 Socket	1 x M.2 3042/3052/2280 Key B (PCIe Gen3/USB 3.2 mode) - Support 4G LTE/5G module 1 x M.2 2230/2260 Key E (CNVi / PCIe Gen3 / USB 2.0 mode) - Support Wifi/BT module

Manageability / Security

Manageability	WDT, Intel® In-Band Manageability
Security	TPM2.0

Power Requirements

DC Input	For Basic/5LAN/5G SKU : - 2 x 3-pin phoenix type for 9 to 36V DC input For PoE SKU : - 2 x 3-pin phoenix type for 19 to 36V DC input OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	Adapter 120W for Basic/5LAN/5G SKU AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A, Adapter 330W for PoE SKU only - AC input 100-240Vac, 4.2A 50-60Hz, DC output 24V, 13.75A

Storage Device

SD Slot	1 x Micro SD card slot (Support SD specification v3.0 UHS-I: SDR25/SDR50)
M.2 Socket	1 x M.2 2280 Key M (PCIe Gen3)

Mechanical

Dimensions	For Basic SKU : 55(W) x 170(H) x 134(D) mm For PoE/5LAN/5G SKU : 68(W) x 170(H) x 134(D) mm
Indicator	1 x Storage LED 1 x UD LED (User Define) 2 x Diagnostic LED 2 x DCIN LED
Function	1 x Power Button with LED
Net Weight	TBD
Mounting	For Basic SKU : Wall mount, VESA mount, DIN-Rail For PoE/5LAN/5G SKU : Wall mount, Din Rail

Environmental

Operating Temperature	15W CPU: For Basic/5LAN-WIFI SKU : -40°C-70°C (-40°F-158°F) For 5G/5LAN-5G SKU with 4G LTE module : -40°C-60°C (-40°F-140°F) For 5G/5LAN-5G SKU with 5G module : -40°C-55°C (-40°F-131°F) For PoE SKU : -40°C-50°C (-40°F-122°F) 28W CPU: For all SKU : -40°C-50°C (-40°F-122°F) (w/ airflow 0.5-0.8m/s)
Storage Temperature	-40°C-85°C (-40°F-185°F)
Humidity	-95% @ 40°C (non-condensing)
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-8 KV, Air +/-15 KV
Shock	Operating: 100G (half sine 11ms duration with SSD)
EMC	CE, FCC Class A (EN61000-6-4/-2)
Safety	LVD

Add-on Feature / OS Support

OS Support	Windows & Linux
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Order Information	SKU	Processor	WiFi*	4G LTE/5G*	LAN	PoE	DIO
iEP-7030E-010	Basic SKU	MTL-U, i7	Support	Not Support	3	Not Support	Not Support
iEP-7031E-010		MTL-U, i5					
iEP-7032E-010		MTL-H, i7					
iEP-7033E-010	MTL-H, i5						
iEP-7030E-011	PoE SKU	MTL-U, i7	Support	Not Support	5	Support	Not Support
iEP-7031E-011		MTL-U, i5					
iEP-7032E-011		MTL-H, i7					
iEP-7033E-011	MTL-H, i5						
iEP-7030E-012	5LAN-WIFI SKU	MTL-U, i7	Support	Not Support	5	Not Support	Not Support
iEP-7031E-012		MTL-U, i5					
iEP-7032E-012		MTL-H, i7					
iEP-7033E-012	MTL-H, i5						
iEP-7030E-013	5LAN-5G SKU	MTL-U, i7	Not Support	Support	5	Not Support	Not Support
iEP-7031E-013		MTL-U, i5					
iEP-7032E-013		MTL-H, i7					
iEP-7033E-013	MTL-H, i5						
iEP-7030E-014	5G-WIFI SKU	MTL-U, i7	Support	Support	3	Not Support	Support
iEP-7031E-014		MTL-U, i5					
iEP-7032E-014		MTL-H, i7					
iEP-7033E-014	MTL-H, i5						

*The Wi-Fi, 4G LTE and 5G module kits are purchased separately

iEP-7020E Series

Industrial IoT Controller



Basic SKU

PoE SKU
5LAN-WiFi SKU
5LAN-5G SKU

5G SKU

KEY FEATURES

- Intel® 13th Gen Core™ Embedded & Industrial Processors
- Scalable power and performance in BGA for edge controller
- High performance Intel® Iris Xe Graphics architecture
- Fan-less and Rugged Design
- -40°C to 70°C Wide Operating Temp. for Basic/5LAN/5G SKU(15W)
- -40°C to 50°C Wide Operating Temp. for PoE SKU
- 9-36VDC Wide Range Power Inputs for Basic/5LAN/5G SKU
- 19-36VDC Wide Range Power Inputs for PoE SKU
- Intel® TCC and TSN Support for Real-Time Computing
- 3 x Intel i226-IT LAN (One support vPro)
- 2 x Intel i210-AT LAN (Support IEEE 802.3AF PoE)
- Support Intel® IN-Band ECC

SPECIFICATIONS

System Core

Processor	Intel® 13th Gen Core™ i7/i5 Industrial Processor - [iEP-7020E Series] Intel® Core™ i7-1365URE, 10C, 1.70GHz, 15W - [iEP-7021E Series] Intel® Core™ i5-1345URE, 10C, 1.40GHz, 15W - [iEP-7022E Series] Intel® Core™ i7-1370PRE, 14C, 1.90GHz, 28W - [iEP-7023E Series] Intel® Core™ i5-1350PRE, 12C, 1.80GHz, 28W
Video	2 x DP++ 1.4a
Memory	2 x DDR4 3200MHz SO-DIMM, up to 64GB (Support In-Band ECC)

I/O Interface

Ethernet	3 x Intel® i226-IT (One Support vPro) 2 x Intel® I210-AT for PoE SKU/5LAN SKU
PoE (Option)	2 x Intel® i210AT, each port supports IEEE 802.3AF PoE for PoE SKU only
Serial Port	4 x RS232/422/485
USB	3 x USB 3.2 Gen2x1 1 x USB 2.0
Proprietary IO	1 x 4DIs/4DOs, Power on and Reset (15-pin D-sub connector)
Audio	1 x Line Out, 1 x Mic In

Expansion

SIM	1 x Nano SIM Card slot
RF& Antenna (Option)	7 x SMA connector hole reserved, support for Basic/5G SKU 5 x SMA connector hole reserved, support for PoE/5LAN SKU
M.2 Socket	1 x M.2 3042/3052/2280 Key B (PCIe Gen3x1/USB3.2 mode) - Support 4G LTE/5G module - Support SATA3 SSD storage for Basic SKU 1 x M.2 2230 Key E (CNVi/PCIe Gen3x1/USB2.0 mode) - Support Wifi/BT module

Manageability / Security

Manageability	WDT, Intel® In-Band Manageability
Security	TPM2.0

Power Requirements

DC Input	For Basic/5LAN/5G SKU : - 1 x 3-pin phoenix type for 9 to 36V DC input For PoE SKU : - 1 x 3-pin phoenix type for 19 to 36V DC input OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	Adaptor 120W for Basic/5LAN/5G SKU - AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A, Adaptor 330W for PoE SKU only - AC input 100-240Vac, 4.2A 50-60Hz, DC output 24V, 13.75A

Storage Device

SD Slot	1 x Micro SD card slot (Support SD specification v3.0 UHS-I: SDR25/SDR50)
SATA	1 x 2.5" 9.5mm SATA3 SSD for Basic SKU series only
M.2 Socket	1 x M.2 2280 Key M (PCIe Gen4 x4)

Mechanical

Dimensions	For Basic SKU : 55(W) x 170(H) x 134(D) mm For PoE/5LAN/5G SKU : 68(W) x 170(H) x 134(D) mm
Indicator	1 x Storage LED 1 x UD LED (User Define)
Function	2 x Diagnostic LED
Net Weight	1 x Power Button with LED Basic SKU : 1.57 kg PoE SKU : 2.37kg 5LAN SKU : 2.27g
Mounting	5G SKU : 2.15g For Basic SKU : Wall mount, VESA mount, DIN-Rail For PoE/5LAN/5G SKU : Wall mount, Din Rail

Environmental

Operating Temperature	15W CPU: For Basic/5LAN-WIFI SKU : -40°C~70°C (-40°F~158°F) For 5G/5LAN-5G SKU with 4G LTE module : -40°C~60°C (-40°F~140°F) For 5G/5LAN-5G SKU with 5G module : -40°C~55°C (-40°F~131°F) For PoE SKU : -40°C~50°C (-40°F~122°F) 28W CPU: For all SKU : -40°C~50°C (-40°F~122°F) (w/ airflow 0.5~0.8m/s)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Humidity	-95% @ 40°C (non-condensing)
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-8 KV, Air +/-15 KV
Shock	Operating: 100G (half sine 11ms duration with SSD)
EMC	CE, FCC Class A (EN61000-6-4/-2)
Safety	LVD

Add-on Feature / OS Support

Real-Time Enablement	TSN, TCC support under Linux
OS Support	Windows 10 & Ubuntu 22.04 LTS

Order Information	SKU	Processor	2.5 Storage	WiFi*	4G LTE/5G*	LAN	PoE
iEP-7020E-010	Basic SKU	i7-1365URE	Support	Support	Not Support	3	Not Support
iEP-7021E-010		i5-1345URE					
iEP-7022E-010		i7-1370PRE					
iEP-7023E-010	i5-1350PRE						
iEP-7020E-011	PoE SKU	i7-1365URE	Not Support	Support	Not Support	5	Support
iEP-7021E-011		i5-1345URE					
iEP-7022E-011		i7-1370PRE					
iEP-7023E-011	i5-1350PRE						
iEP-7020E-012	5LAN-WIFI SKU	i7-1365URE	Not Support	Support	Not Support	5	Not Support
iEP-7021E-012		i5-1345URE					
iEP-7022E-012		i7-1370PRE					
iEP-7023E-012	i5-1350PRE						
iEP-7020E-013	5LAN-5G SKU	i7-1365URE	Not Support	Not Support	Support	5	Not Support
iEP-7021E-013		i5-1345URE					
iEP-7022E-013		i7-1370PRE					
iEP-7023E-013	i5-1350PRE						
iEP-7020E-014	5G-WIFI SKU	i7-1365URE	Not Support	Support	Support	3	Not Support
iEP-7021E-014		i5-1345URE					
iEP-7022E-014		i7-1370PRE					
iEP-7023E-014	i5-1350PRE						

*The WI-FI, 4G LTE and 5G module kits are purchased separately

iEP-5020G Series

Industrial IoT Controller



Basic SKU

PoE SKU
5LAN SKU

KEY FEATURES

- Latest and Powerful Intel® Atom® x7000RE Processor (Amston Lake)
- Fan-less and Rugged Design
- -40°C to 70°C Wide Operating Temp. for Basic SKU
- -40°C to 50°C Wide Operating Temp. for PoE SKU
- 6-36VDC Wide Range Power Inputs for Basic SKU
- 19-36VDC Wide Range Power Inputs for PoE SKU
- Most Flexible IOs and Expansion for Industrial Applications
- Intel® TCC and TSN Support for Real-Time Computing
- DIN Rail or Wall Mount Options
- 4 x Intel 1G LAN (2 Support IEEE 802.3AF PoE Ports)
- 1 x Intel 2.5G LAN
- Support Intel® IN-Band ECC

SPECIFICATIONS

System Core

Processor	Intel® Atom® x7000RE Processor (Amston Lake Platform) - Intel® Atom® x7835RE, 8C, 1.3GHz, 12W - Intel® Atom® x7211RE, 2C, 1.0GHz, 6W
Video	1 x Type-C, 1 x DP1.4a
Memory	1 x DDR5 4800MHz SO-DIMM, up to 16GB (In-Band ECC)

I/O Interface

Ethernet	2 x Intel® I210-IT (1GbE) 1 x Intel® I226-IT (2.5GbE, support TSN) 2 x Intel® I210-AT for PoE SKU/5LAN SKU
Ethernet/PoE (Option)	2 x Intel® i210AT, each port supports IEEE 802.3AF PoE for PoE SKU
Serial Port	2 x RS-232/422/485 (9-pin D-sub connector)
USB	2 x USB 3.2 Gen2 1 x USB2.0 1 x Type-C USB3.2 Gen2
Digital I/O	8DIs/8DOs with sink/source isolation 3KV for DIO SKU
Audio	1 x Mic in 1 x Line out

Expansion

SIM	1 x Nano SIM Card slot
RF& Antenna (Option)	M.2 Wi-Fi 6E module supports IEEE 802.11 a/b/g/n/ac/ax + BT 5.2 - 3 x 4G LTE antenna and 2 x Wi-Fi antenna - 4 x 5G antenna and 2 x Wi-Fi antenna
M.2 Socket	1 x M.2 3042/3052 Key B (PCIe Gen3x1 / USB3.2 Gen1x1 mode) - Support 4G LTE/5G module 1 x M.2 2230/2260 Key E (PCIe Gen3x1 / USB2.0 mode) - Support Wifi/BT module

Manageability / Security

Manageability	WDT, Intel® In-Band Manageability
Security	TPM2.0

Power Supply

DC Input	2 x 3-pin terminal block (Phoenix type) for 6 to 36V DC input (For Basic/5LAN/DIO SKU) 2 x 3-pin terminal block (Phoenix type) for 19 to 36V DC input (For PoE SKU) - OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	AC input 100-240Vac, 1.5A 50-60Hz, DC output 19V, 3.42A, 65W Adaptor (For Basic/5LAN/DIO SKU) AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A, 120W Adaptor (For PoE SKU)

Storage Device

SD Slot	1 x Micro SD card slot(SD Card specification version 3.01)
M.2 Socket	1 x M.2 2280 Key M (PCIe Gen3x2)

Mechanical

Dimensions	58mm (W) x 125mm (D) x 157mm (H)
Indicator	1 x NVMe Storage LED 1 x Wi-Fi / BT LED 2 x Diagnostic LED 2 x Power LED
Function	Power on Button with LED
Net Weight	TBD
Mounting (Option)	DIN-Rail or Wall mounting

Environmental

Operating Temperature	For Basic/5LAN/DIO SKU: -40°C ~ 70°C (-40°F~158°F) (w/ airflow 0.5~0.8m/s) For PoE SKU : -40°C ~ 50°C (-40°F~122°F) (w/ airflow 0.5~0.8m/s)
Storage Temperature	-40°C ~ 85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-8 KV, Air +/-15 KV
Shock	Operating 100G, half sine 11 ms duration with SSD
EMC	CE (EN61000-6-4/-2) and FCC Class A
Safety	LVD

Add-on Feature / OS Support

Real-Time Enablement	TSN, TCC support under Ubuntu (only LAN1)
OS Support	Windows*, Linux

Order Information	SKU	Processor	Storage	Wi-Fi*	4G LTE/5G*	LAN	PoE	D/DO
iEP-5020G-020	Basic SKU	X7835RE	M.2 Key M	Support	Support	3	Not Support	Not Support
iEP-5020G-021	PoE SKU			Support	Support	5	Support	Not Support
iEP-5020G-022	5LAN-WIFI			Support	Not Support	5	Not Support	Not Support
iEP-5020G-023	5LAN-5G			Not Support	Support	5	Not Support	Not Support
iEP-5020G-024	DIO SKU			TBD	TBD	3	Not Support	Support

*The Wi-Fi, 4G LTE and 5G module kits are purchased separately.

iEP-5010G Series

Industrial IoT Controller



Basic SKU

PoE SKU
5LAN-WIFI SKU
5LAN-5G SKU

KEY FEATURES

- Latest and Powerful Intel® Atom® x6000RE Processor (Elkhart Lake)
- Fan-less and Rugged Design
- -40°C to 70°C Wide Operating Temp. for Basic SKU
- -40°C to 50°C Wide Operating Temp. for PoE SKU
- 6-36VDC Wide Range Power Inputs for Basic/5LAN/5G SKU
- 19-36VDC Wide Range Power Inputs for PoE SKU
- Most Flexible IOs and Expansion for Industrial Applications
- Intel® TCC and TSN Support for Real-Time Computing
- DIN Rail or Wall Mount Options
- 4 x Intel 1G LAN (2 Support IEEE 802.3AF PoE Ports)
- 1 x Intel 2.5G LAN
- Support Intel® IN-Band ECC

SPECIFICATIONS

System Core

Processor	Intel® Atom® x6000RE Processor (Elkhart Lake Platform) - iEP-5010G: Intel Atom® x6425RE, 4C, 1.9GHz, 12W - iEP-5011G: Intel Atom® x6214RE, 2C, 1.4GHz, 6W
Video	1 x HDMI 2.0b, 1 x VGA
Memory	2 x DDR4 3200MHz SO-DIMM, up to 32GB (In-Band ECC)

I/O Interface

Ethernet	2 x Intel® I210-IT (1GbE) 1 x Intel® I226-IT (2.5GbE, support TSN) 2 x Intel® I210-AT for PoE SKU/5LAN SKU
Ethernet/PoE (Option)	2 x Intel® i210AT, each port supports IEEE 802.3AF PoE for PoE SKU
Serial Port	3 x RS-232/422/485 (9-pin D-sub connector)
USB	2 x USB 3.2 Gen1x1 2 x USB 2.0
Digital I/O	4DIs/4DOs (9-pin D-sub connector)
Audio	1 x Mic in 1 x Line out

Expansion

SIM	1 x Nano SIM Card slot
RF Antenna (Option)	M.2 Wi-Fi 6E module supports IEEE 802.11 a/b/g/n/ac/ax + BT 5.2 - 3 x 4G LTE antenna and 2 x Wi-Fi antenna - 4 x 5G antenna and 2 x Wi-Fi antenna
M.2 Socket	1 x M.2 3042/3052 Key B (PCIe Gen3x1 / USB3.2 Gen1x1 mode) - Support 4G LTE/5G module 1 x M.2 2230 Key E (PCIe Gen3x1 / USB2.0 mode) - Support Wifi/BT module

Manageability / Security

Manageability	WDT, Intel® In-Band Manageability
Security	TPM2.0

Power Supply

DC Input	1 x 3-pin pluggable terminal block (Phoenix type) for 6 to 36V DC input (For Basic/5LAN SKU) 1 x 3-pin pluggable terminal block (Phoenix type) for 19 to 36V DC input (For PoE SKU) - OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	AC input 100-240Vac, 1.5A 50-60Hz, DC output 19V, 3.42A, 65W Adaptor (For Basic/5LAN SKU) AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A, 120W Adaptor (For PoE SKU)

Storage Device

SD Slot	1 x Micro SD card slot(SD Card specification version 3.01)
SATA(Optional)	1 x 2.5" 9.5mm SATA3 SSD (For Basic SKU only)
M.2 Socket	1 x M.2 2280 Key M (PCIe Gen3 / SATA3 mode)

Mechanical

Dimensions	58mm (W) x 125mm (D) x 157mm (H)
Indicator	1 x SATA / NVMe Storage LED, 1 x Wi-Fi / BT LED
Function	Power on Button with LED, Clear CMOS Button
Net Weight	Basic SKU : 1.43kg PoE SKU : 1.75kg 5LAN SKU : 1.65kg
Mounting (Option)	DIN-Rail or Wall mounting

Environmental

Operating Temperature	For Basic/5LAN SKU: -40°C ~ 70°C (-40°F~158°F) (w/ airflow 0.5~0.8m/s) For PoE SKU : -40°C ~ 50°C (-40°F~122°F) (w/ airflow 0.5~0.8m/s)
Storage Temperature	-40°C ~ 85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-8 KV, Air +/-15 KV
Shock	Operating 100G, half sine 11 ms duration with SSD
EMC	CE and FCC Class A (EN61000-6-4/-2)
Safety	LVD

Add-on Feature / OS Support

Real-Time Enablement	TSN, TCC support under Ubuntu (only LAN1)
OS Support	Windows 10, Ubuntu 22.04 LTS

Order Information	SKU	Processor	2.5 Storage	WiFi*	4G LTE/5G*	LAN	PoE
iEP-5010G-010	Basic SKU	X6425RE	Support by additional kits	Support	Support	3	Not Support
iEP-5011G-010		X6214RE					
iEP-5010G-011	PoE SKU	X6425RE	Not Support	Support	Support	5	Support
iEP-5011G-011		X6214RE					
iEP-5010G-012	5LAN-WIFI	X6425RE	Not Support	Support	Not Support	5	Not Support
iEP-5011G-012		X6214RE					
iEP-5010G-013	5LAN-5G	X6425RE	Not Support	Not Support	Support	5	Not Support
iEP-5011G-013		X6214RE					

*The Wi-Fi, 4G LTE and 5G module kits are purchased separately

iEP-5000G Series

Industrial IoT Controller



Basic SKU

PoE SKU
5LAN-WIFI SKU
5LAN-5G SKU

KEY FEATURES

- Latest and Powerful Intel® Atom® x6000E Processor
- Fan-less and Rugged Design, Wide Temperature Operating (-40 °C to 70 °C)
- 6-36VDC Wide Range Power Inputs
- Most Flexible IOs and Expansion for Industrial Applications
- Intel® TCC and TSN Support for Real-Time Computing
- DIN Rail or Wall Mount Options
- 5 x Intel® 1G LAN (2 Support IEEE 802.3AF PoE Ports)
- Support Intel® IN-Band ECC

SPECIFICATIONS

System Core

Processor	Intel® Atom® x6000E Processor - Intel Atom® x6425RE, 4C, 1.9GHz, 12W
Video	1 x HDMI 2.0b, 1 x VGA
Memory	2 x DDR4 3200MHz SO-DIMM, up to 32GB (In-Band ECC)

I/O Interface

Ethernet	3 x Maxlinear GPHY215 2 x Intel® I210-AT for PoE SKU/5LAN SKU
PoE (Option)	2 x Intel® I210-AT ports, each port supports IEEE 802.3AF PoE for PoE SKU only
Serial Port	3 x RS-232/422/485 (9-pin D-sub connector)
USB	2 x USB 3.2 Gen1x1 2 x USB 2.0
Digital I/O	4DIs/4DOs (9-pin D-sub connector)
Audio	1 x Mic in 1 x Line out

Expansion

SIM	1 x Nano SIM Card slot
RF& Antenna (Option)	M.2 Wi-Fi 6E module supports IEEE 802.11 a/b/g/n/ac/ax + BT 5.2 - 3 x 4G LTE antenna and 2 x Wi-Fi antenna - 4 x 5G antenna and 2 x Wi-Fi antenna
M.2 Socket	1 x M.2 3042/3052 Key B (PCIe Gen3x1 / USB3.2 Gen1x1 mode) - Support 4G LTE/5G module 1 x M.2 2230 Key E (PCIe Gen3x1 / USB2.0 mode) - Support Wifi/BT module

Manageability / Security

Manageability	WDT, Intel® In-Band Manageability
Security	TPM2.0

Power Supply

DC Input	1 x 3-pin pluggable terminal block (Phoenix type) for 6 to 36V DC input (iEP-5000G-010/012/013) 1 x 3-pin pluggable terminal block (Phoenix type) for 19 to 36V DC input (For iEP-5000G-011 only) - OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	AC input 100-240Vac, 1.5A 50-60Hz, DC output 19V, 3.42A, 65W Adaptor (For Basic/5LAN SKU) AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A, 120W Adaptor (For PoE SKU)

Storage Device

SD Slot	1 x Micro SD card slot(SD Card specification version 3.01)
SATA(Optional)	1 x 2.5" 9.5mm SATA3 SSD for Basic SKU only
M.2 Socket	1 x M.2 2280 Key M (PCIe Gen3 / SATA3 mode)

Mechanical

Dimensions	58mm (W) x 125mm (D) x 157mm (H)
Indicator	1 x SATA / NVMe Storage LED, 1 x Wi-Fi / BT LED
Function	Power on Button with LED, Clear CMOS Button
Net Weight	Basic SKU : 1.43kg PoE SKU : 1.75kg 5LAN SKU : 1.65kg
Mounting (Option)	DIN-Rail or Wall mounting

Environmental

Operating Temperature	For Basic/5LAN SKU : -40°C ~ 70°C (-40°F~158°F) (w/ airflow 0.5~0.8m/s) For PoE SKU : -40°C ~ 50°C (-40°F~122°F) (w/ airflow 0.5~0.8m/s)
Storage Temperature	-40°C ~ 85°C (-40°F~185°F)
Humidity	~95% @ 40°C (non-condensing)
Vibration	Operating: 5 Grms, 5-500 Hz, 3 axes with SSD
ESD	Contact +/-8 KV, Air +/-15 KV
Shock	Operating 100 G, half sine 11 ms duration with SSD
EMC	CE and FCC Class A (EN61000-6-4/-2)
Safety	LVD

Add-on Feature / OS Support

Real-Time Enablement	TSN, TCC support under Linux
OS Support	Windows 10, Ubuntu 22.04 LTS

Order Information	SKU	Processor	2.5 Storage	WiFi*	4G LTE/5G*	LAN	PoE	DC-IN Type
iEP-5000G-000	Basic SKU	X6425RE	Support by additional kits	Support	Support	3	Not Support	DC Jack Phoenix
iEP-5000G-010			Support	Support	3	Not Support	Phoenix	
iEP-5000G-011	PoE SKU		Not Support	Support	Support	5	Support	Phoenix
iEP-5000G-012	5LAN-WIFI		Not Support	Support	Not Support	5	Not Support	Phoenix
iEP-5000G-013	5LAN-5G		Not Support	Not Support	Support	5	Not Support	Phoenix

*The Wi-Fi, 4G LTE and 5G module kits are purchased separately

iEP-6010E Series

Industrial IoT Controller



Basic SKU

POE SKU

5G SKU

KEY FEATURES

- NVIDIA Jetson Orin NX SOM support, up to 100 SPARSE (50 DENSE) INT8 TOPS
- NVIDIA Jetson Orin Nano SOM support, up to 40 SPARSE (20 DENSE) INT8 TOPS
- POE SKU integrates 2x POE ports. Each port supports IEEE 802.3AF
- Anti Shock and Vibration
- Wide Range Operating Temperature (-25 to 60°C)
- 12-36V Phoenix type DC IN support
- 2nd DC IN Interface (PD3.0 20V USB Type-C with Locking feature) for Mobile device application or Redundant power source
- Wall Mount or DIN-Rail for Vertical IPC Installation (All SKU).
- Wall Mount or VESA Mount for Horizontal IPC Installation (BASIC SKU only)
- Carrier board reserved 2pcs Dual Lane MIPI-CSI2 connectors (Option)**

SPECIFICATIONS

Processor System

System on Module	- NVIDIA Jetson Orin NX SOM 16GB support (Basic SKU iEP-6010E-000, PoE SKU iEP-6010E-001, 5G SKU iEP-6010E-003) - NVIDIA Jetson Orin NX SOM 8GB support (Basic SKU iEP-6011E-000) - NVIDIA Jetson Orin Nano SOM 8GB support (Basic SKU iEP-6012E-000, PoE SKU iEP-6012E-001, 5G SKU iEP-6012E-003) - NVIDIA Jetson Orin Nano SOM 4GB support (Basic sku iEP-6013E-000)
Video	1 x HDMI 2.0 (Orin NX) / 1.4 (Orin Nano)
Memory	16GB 128-bit LPDDR5 (Jetson Orin NX 16GB) 8GB 128-bit LPDDR5 (Jetson Orin NX 8GB) 8GB 128-bit LPDDR5 (Jetson Orin Nano 8GB) 4GB 64-bit LPDDR5 (Jetson Orin Nano 4GB)
TPM	TPM2.0

I/O Interface

Ethernet	2 x Gigabit LAN
PoE (Option)	2x Intel I210AT ports, each port supports IEEE 802.3AF PoE (Orin NX SOM 16GB PoE SKU iEP-6010E-001, Orin Nano SOM 8GB PoE SKU iEP-6012E-001)
Serial Port	1 x RS-232, 1 x RS-232/422/485 (Pin9 default is N/A, +5V or +12V/1A software programmable,)
USB	2 x USB 3.2 Gen 2x1 (one with Locking) 2 x USB 2.0, 1 x Micro USB 2.0 (Device mode only, for OS Flash)
Proprietary IO	DPR connector: 1 x DB15 for 4*DI, 4*DO, GND, Power Pin (Default is N/A, +5V/1A software programmable), PowerOn, LED+, LED-, GND, Reset ISC connector: 1 x DB15 for Power Pin(Default is N/A, +3V/1A software programmable), 5 x GND, 1 x I2C, 1 x SPI, 1 x CANBUS (GND Pins.)

Expansion

SIM	1 x Nano SIM Card slot
RF& Antenna (Option)	up to 4 x 5G/4G LTE antenna + 2 x Wi-Fi antenna for 5G SKU
M.2 Socket	1 x M.2 (Key B, 3042/3052/2280) -For PCIe Gen3 x1 / USB3.2 Gen2x1 5G module (Option) (5G SKU Only, Orin NX SOM 16GB 5G SKU iEP-6010E-003, Orin Nano SOM 8GB 5G SKU iEP-6012E-003) -For PCIe Gen3 x1 / USB3.2 Gen2x1 4G LTE module (Option) (5G SKU Only, Orin NX SOM 16GB 5G SKU iEP-6010E-003, Orin Nano SOM 8GB 5G SKU iEP-6012E-003) -For PCIe Gen3 x1 M.2 B Key 2280 SSD module (Option, Basic SKU Only) 1 x M.2 (Key E, 2230) for PCIe Gen3 x1 Wi-Fi and USB2.0 Bluetooth module

Power Requirements

DC Input	1 st DC IN source: 12V~36V DC input, 80V Surge Protection, OVP, UVP, OCP, Reverse Protection, Phoenix type connector 2 nd DC IN source: PD3.0 20V USB Type-C power adaptor interface (Locking feature), It can be backup DC input when 1 st DC IN is 21V~36V
AC to DC Adaptor (Option)	For Basic SKU: 120W Adapter, AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A For POE/5G SKU: 330W Adapter, AC input 100-240Vac, 4.2A 50-60Hz, DC output 24V, 13.75A

Storage Device

M.2 Socket	1 x M.2 (Key M, 2280) for wide temperature PCIe Gen3 x 4 NVMe SSD module (System Operating temperature -25° C~60° C) 1 x M.2 (Key M, 2280) for wide temperature PCIe Gen4 x 4 NVMe SSD module (System Operating temperature -25° C~55° C) PCIe Gen4 x 4 SSD only supported by Orin NX SOM
Micro SD Card slot	1 x Micro SD Card Slot (UHS-I/SDR-50)

Mechanical

Dimensions	Basic SKU : 55(W) x 170(H) x 134(D) mm POE/5G SKU : 68(W) x 170(H) x 134(D) mm
Indicator	1 x Storage LED 1 x DC-IN LED
Function	Power on button with LED, OS Flash Button, Reset Tact Switch Enable/Disable Auto power on Switch
Net Weight	Basic SKU: 1.3kg, 5G/POE SKU: 1.6kg
Mounting (Option)	- Horizontal Wall mounting or VESA mounting bracket (Basic SKU only) - Vertical Wall mounting or Din Rail mounting bracket (All SKU)

Environmental

Operating Temperature	-25~60° C (-13~140°F) for Basic sku, PoE sku, or 5G sku w/ 4G LTE Module when installed with WT SSD Gen3 x 4 -25~55° C (-13~131°F) for Basic sku, PoE sku, or 5G sku w/ 4G LTE Module when installed with WT SSD Gen4 x 4 -25~55° C (-13~131°F) for 5G sku w/ 5G Module when installed with WT SSD Gen4 x 4 or WT SSD Gen3 x 4 (w/ air flow 0.5~0.8m/s)
Storage Temperature	-40° C~85° C (-40° F~185° F)
Humidity	~90% @ 45° C (non-condensing)
EMC	CE, FCC Class A (EN61000-6-4/-2) *(e)
Safety	LVD*(e)
Shock	IEC 60068-2-27, Operating Shock 100G with 11 ms duration, half sine wave
Vibration	IEC 60068-2-64, Operating Random Vibration 5 Grms, 5-500 Hz, 3 axes, 30 min/axis

Add-on Feature / OS Support

2 nd DC IN Interface	PD3.0 20V USB Type-C power adaptor interface (Locking feature), It can be backup DC input when 1 st DC IN is 21V~36V
Carrier board feature	Carrier board reserved 2pcs Dual Lane MIPI-CSI2 connectors (Option)**
OS Support	NVIDIA JetPack 5.1.2 *(e)

*(e) means estimation.

**MIPI-CSI2 camera need to be turned off before system going to sleep mode.

It is current NVIDIA JetPack limitation.

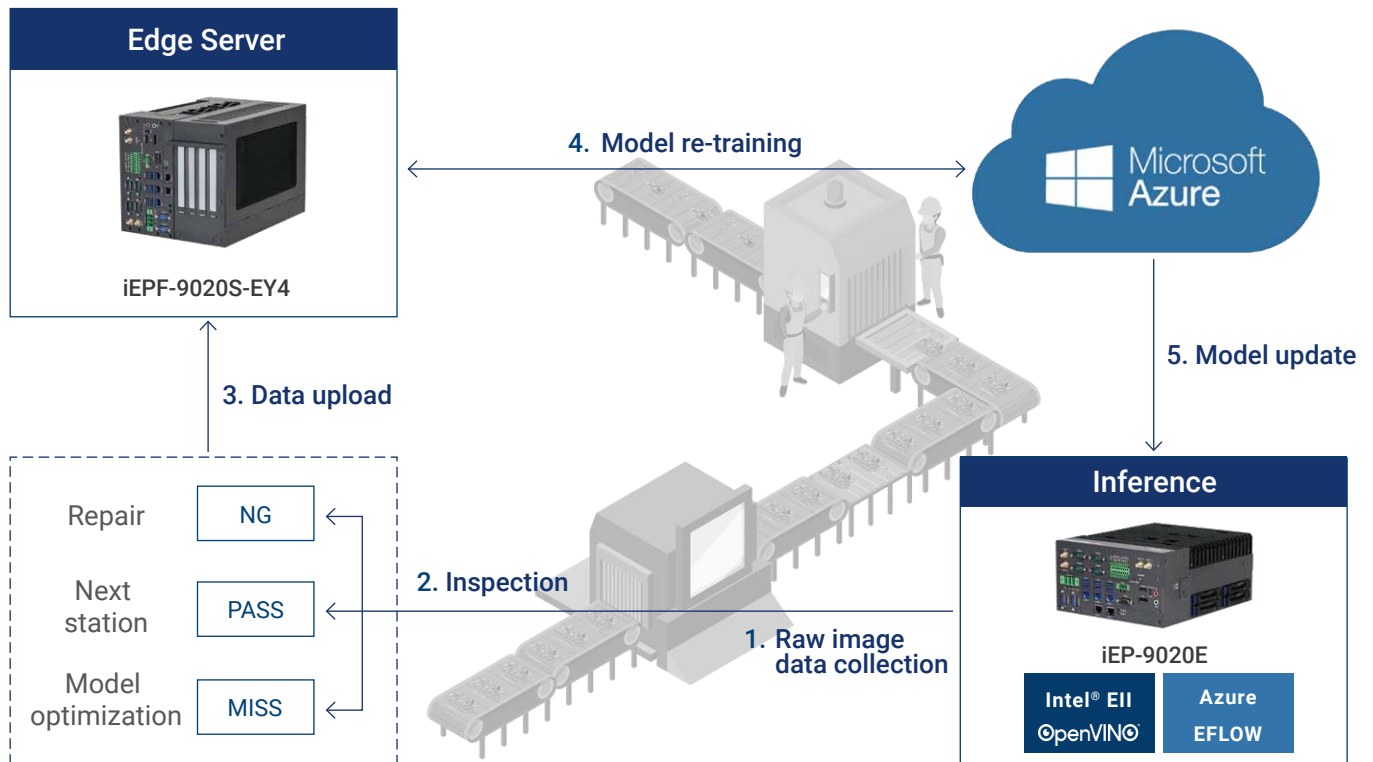
AI AOI Workload Consolidation



iEP-9020E Robust Edge AIoT Platform

Solution

ASRock Industrial iEP-9020E Robust Edge AIoT Platform unleashes the next gen AI AOI Workload Consolidation Solution as a game-changer in defect inspection at our OEM factory. This groundbreaking solution leverages the power of 13th Gen Intel® Core™ Processor and AI technologies- Intel® Edge Insights for Industrial and OpenVINO through Linux and Windows workload consolidation with Microsoft EFLOW. The solution elevates precision, efficiency in product inspections, addressing the challenges of accuracy, efficiency, and labor shortage, paving the way for a new era of manufacturing excellence.



Results

Improved defect detection accuracy by 97.5%

Enhanced manufacturing process efficiency by 258.8%

Reduced labor cost by 50%

Enabled Linux AI workload consolidation with Windows

Real-time Robotic Control



iEP-5010G

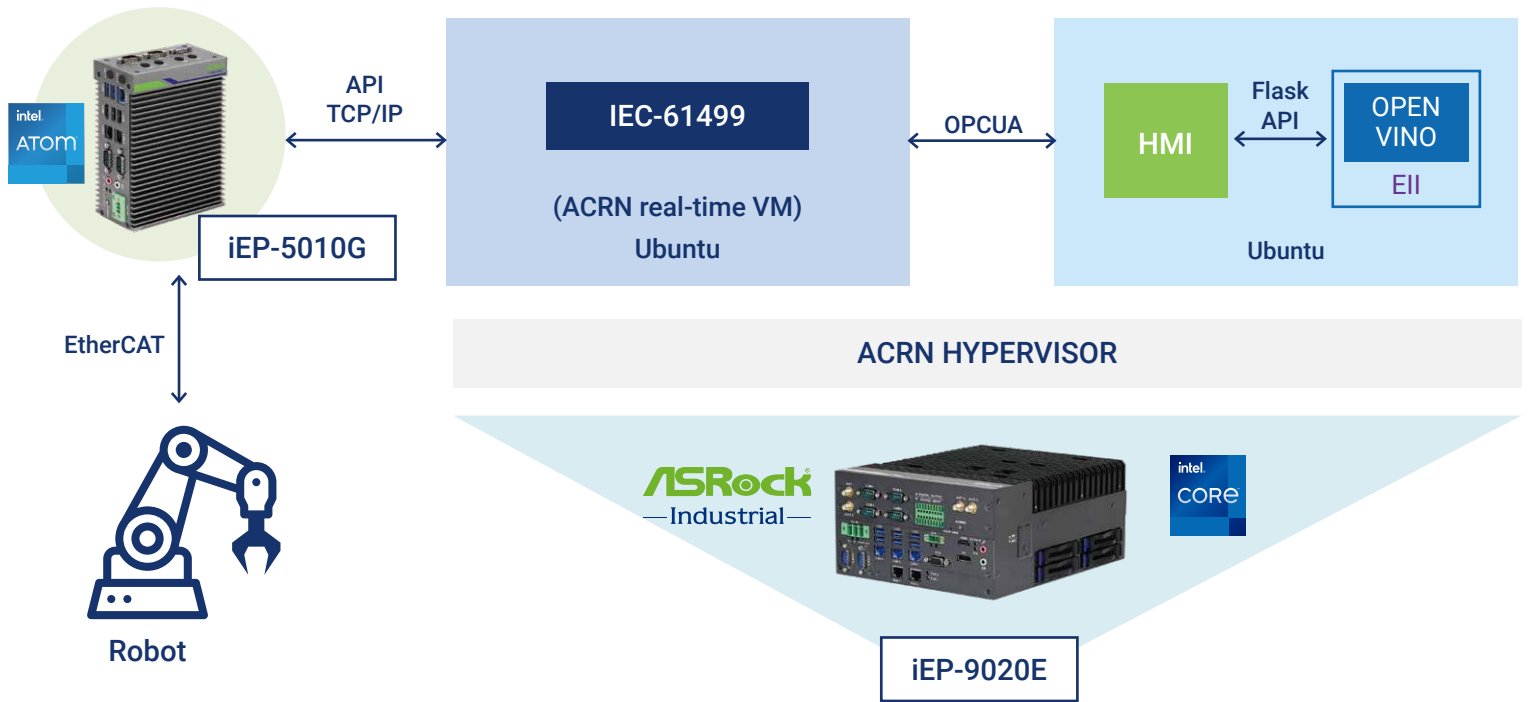


iEP-9020E



Solution

ASRock Industrial's iEP-9020E and iEP-5010G power up real-time robotic control by integrating AI vision and control capabilities. This solution captures camera images and utilizes Intel® EII- OpenVINO™ for precision object detection through AI inference. With IEC-61499, Intel® Edge Controls for Industrial, the iEP-5010G facilitates real-time robotic control via EtherCAT. The arm's movement status can be instantly displayed for real-time monitoring on HMI, with connectivity to the control center, enabling remote management capabilities.



Results

Integrated AI vision with motion control

Real-time control with Intel ECI, TSN & TCC

Accurate AI detection and positioning

UAO IEC-61499 for open automation

FDO-enabled Devices

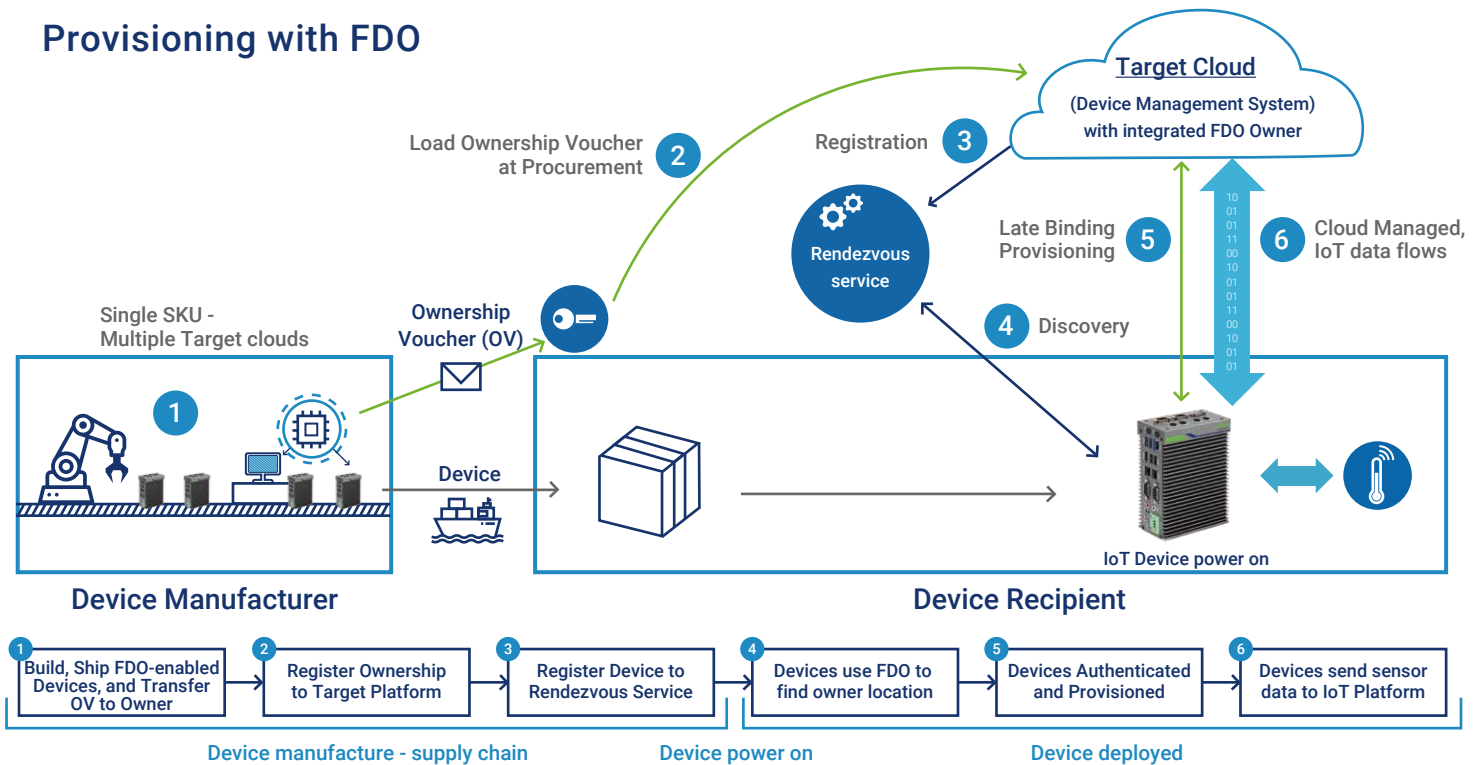


iEP-5000G Industrial IoT Controller

Solution

ASRock Industrial and Intel® jointly develop FIDO Device Onboarding (FDO)-enabled devices - the iEP-5000G for automated system onboarding. It addresses the existing challenges of slow, expensive, and insecure manual onboarding processes in the IoT domain, empowering users to harness the full potential of improved IoT security and enhanced efficiency through seamless automated onboarding capabilities. In streamlined steps, the Ownership Voucher (OV) is registered for the target platform, and the device is sent to a retailer or customer. Once powered up and connected to the network, the device auto-provisions itself, enabling a zero-touch onboarding experience.

Provisioning with FDO



Results

Zero-touch onboarding past power-ON

Fast and secure with lower onboarding costs

Hardware flexibility – ASRock Industrial provides various FDO-enabled devices based on customer needs

Late binding of the device to cloud greatly reduces number of SKUs vs. other zero-touch offerings

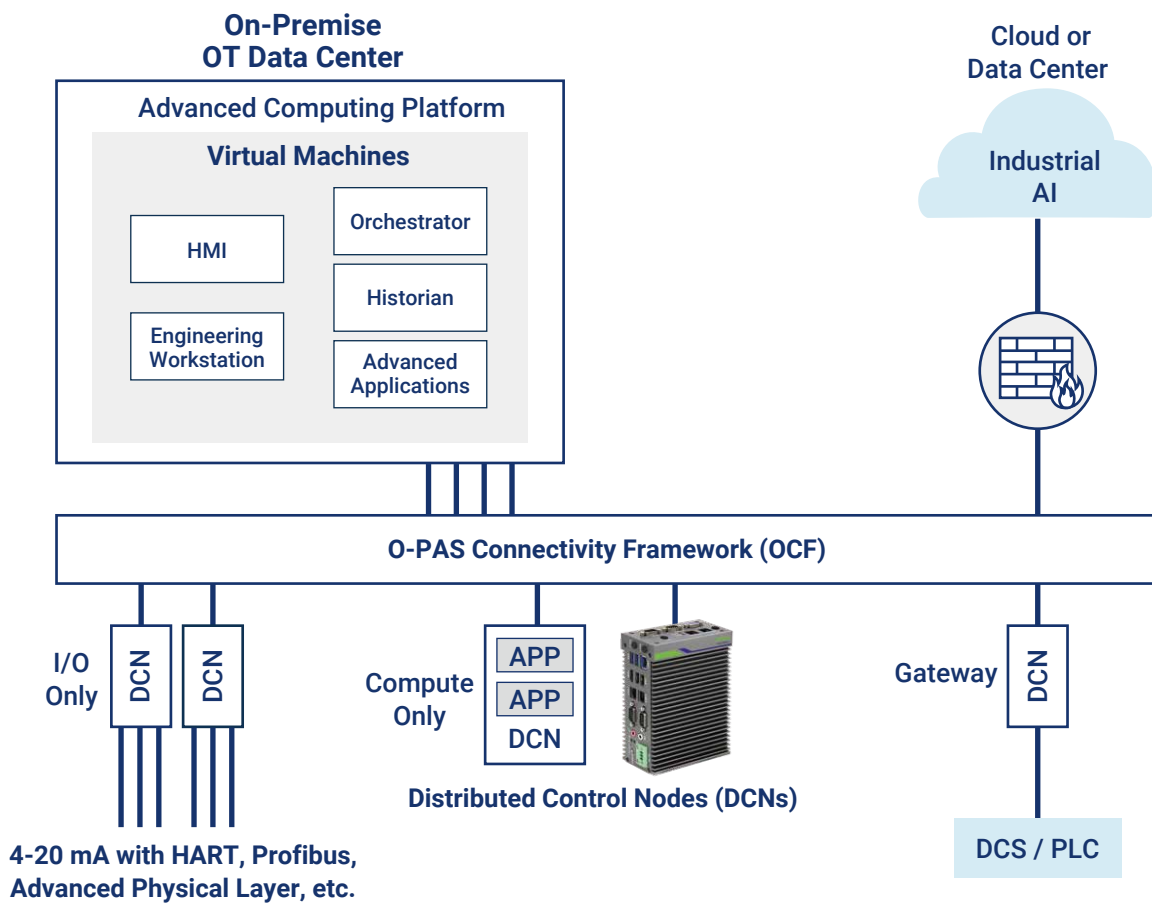
DCN in Open-Process-Automation-Based Control System



iEP-5000G Industrial IoT Controller

Solution

ASRock Industrial collaborates with our eco-system partners to unveil the first open-industrial control systems based on O-PAS™, aiming to accelerate the implementation of Industry 4.0 through open platforms. Our iEP-5000G Industrial IoT Controller is integrated into the open-industrial control systems as distributed control nodes (DCN) to enable advanced control strategies for open process automation.



Results

Increased the competitiveness of manufacturing companies

Open platform avoided vendor lock-in for higher flexibility

Accelerated Industry 4.0 through open platforms

Smart 360° Patrolling & Surveillance in Factory

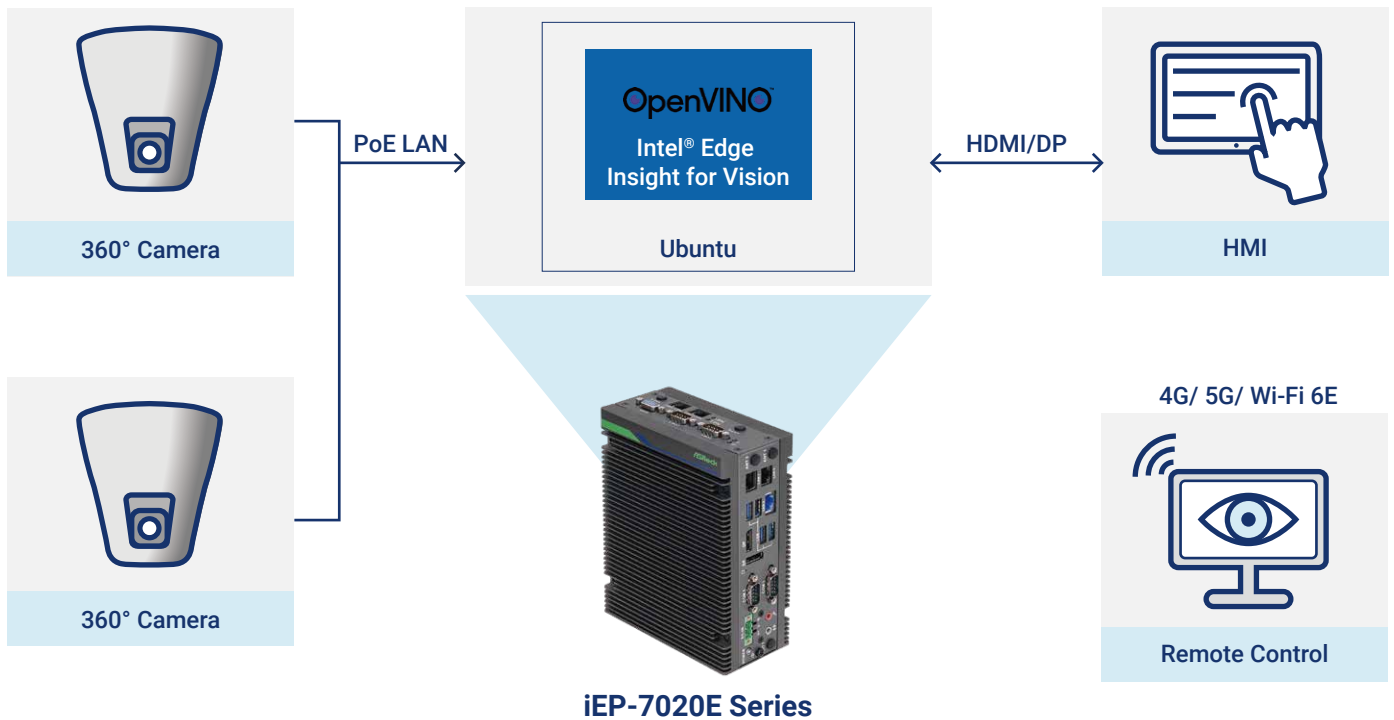


iEP-7020E Series Industrial IoT Controller



Solution

The iEP-7020E Series offers versatile solutions for real-time monitoring and surveillance in factories. By connecting 360° Cameras through PoE ports, it captures comprehensive on-site images. Utilizing Intel® Edge Insight for Vision-OpenVINO™ technology, it enables AI inference and instant image analysis. This intelligent system facilitates continuous monitoring of factories and ensures employees safety on-site. Furthermore, it allows instant playback on the on-site HMI and uploads data to the central control room using 4G/5G/Wi-Fi 6E for remote control and management.



Results

Remote management with 360° video reduced patrolling cost and time drastically

Real-time AI data analysis increased operation efficiency

Reduced labor for patrolling and ensured employee safety



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**Dodavatelem tohoto produktu jsou
FCC průmyslové systémy s. r. o.**

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FCC průmyslové systémy s. r. o. jsou dodavatelem průmyslové výpočetní techniky zastupující významné výrobce v oblasti průmyslové automatizace a telekomunikační techniky.



Panelové počítače

Průmyslové monitory

Vestavné počítače

Průmyslové počítače

Průmyslové tablety a PDA

Průmyslový Ethernet

Průmyslové komunikace

Průmyslové sběrnice

Průmyslové klávesnice

Průmyslové SSD a DRAM

Vzdálená správa

Meinberg - zdroje času