

Robust Edge AIoT Platform



iEPF-9020S Series



iEP-9020E Series



iEP-7020E Series

Cocreate an Intelligent World



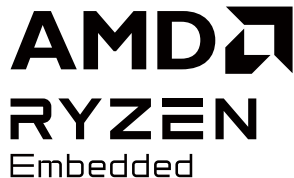
About ASRock Industrial

Established in 2018, ASRock Industrial is a leading IPC system and motherboard supplier with customers all over the world. Formerly known as a business unit of ASRock Inc. founded in 2011, ASRock Industrial is a subsidiary under PEGATRON Corp. Group. Our vision is to cocreate an intelligent world, with core focus in CARES (Commerce/ Automation/ Robot/ Entertainment/ Security) industries.

ASRock Industrial focuses on innovation in product research and development, go-to-market time, product quality, and customer satisfaction. With a leading product speed to reach high computing efficacy needed for the intelligent industry, we aim to accelerate AIoT implementations meanwhile achieve reliability and stability of industrial applications.

Business Alliances

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



Preliminary

iEPF-9020S-EY4

Expandable Edge AIoT Platform

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 255W 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



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 255W 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



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

Preliminary

iEP-9020E

Compact Edge AIoT Platform

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	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



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 255W 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

iEPF-9010S-EY4, iEPF-9012S-EY4 Expandable Edge AIoT Platform

Expansion Slot

PCIe (iEPF-9010S-EY4)	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 255W with optional VGA module 1 x PCIe Gen4 x8 (shared with dual x8) 2 x PCIe Gen4 x4
PCIe (iEPF-9012S-EY4)	1 x PCIe Gen4 x16 (The PCIe x16 slot locates at the third one from the right hand side)
Mini-PCIe (iEPF-9010S-EY4) Mini-PCIe (iEPF-9012S-EY4)	2 x Full/Half size with PCIe Gen3 x1 and USB 2.0 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) USB (iEPF-9012S-EY4)	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	8 DI s/8 DO s

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~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	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	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.

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	8 DI/8 DOs	

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	TSN, TCC support under YOCTO	



iEP-9000E

iEPF-9000S-EX4

KEY FEATURES

iEP-9000E / iEPF-9000S-EX4:

- Intel® 10th Gen Xeon® W or Core™ Processors with W480E 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
- 4 x USB 3.2 Gen2x1, 2 x USB 2.0, 6 x COM, 4 x SATA3, 8 x DI, 8 x DO
- 5 x Intel Gigabit LAN (2 support PoE)
- Supports Triple Display, 2 x Displayport, 1 x VGA

iEPF-9000S-EX4 only:

- 1 x PCIe x16 (PCIe Gen3) or 2 x PCIe x8 (PCIe Gen3), 2 x PCIe x4 (PCIe Gen3)
- Powerful Edge AI acceleration enabled by the most flexible mechanical, thermal, and power design, with support for 275mm x 121mm x 42mm (L x H x D) max. and up to 255W graphic card

SPECIFICATIONS

Processor System	iEP-9000E	iEPF-9000S-EX4
CPU	Intel® 10th Gen Xeon® W or Core™ Processors	
Chipset	Intel® W480E	
Socket	LGA 1200	

Memory

Technology	Dual Channel DDR4 2400 MHz (ECC memory supported by W480E w/ Xeon W/Core i3 CPU)
Capacity	128 GB (32 GB per DIMM)
Socket	4 x 260-pin SO-DIMM

Graphics

Controller	Intel® UHD Graphics
DisplayPort	DisplayPort 1.4, DP++ Max resolution up to 4096x2160@60Hz
VGA	Max resolution up to 1920x1200@60Hz
MultiDisplay	Triple Display

Audio

Interface	Realtek ALC897, High Definition Audio.
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Ethernet

Controller/ Speed	4 x I210IT (2 support PoE, PoE output max.15.4W/port, each port supports IEEE 802.3AF PoE) 1 x I219LM (vPro support)
Connector	5 x RJ45

iEP-9000E, iEPF-9000S-EX4 Compact Edge AIoT Platform

Expansion Slot

PCIe (iEPF-9000S-EX4 only)	1 x PCIe Gen3 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 42mm (L x H x D), if remove the card holder, it can be limited on 275mm x 121mm x 42mm, dual slot width max.) Graphic card can be up to 255W with optional VGA module 1 x PCIe Gen3 x8 (shared with dual x8) 2 x PCIe Gen3 x4 (1 shared with M.2 Key M)
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 USB 2.0 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)

Storage

M.2	1 x M.2 (Key M, 2280) with PCIe Gen3 x4 or SATA3 for 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	2
VGA	1
Ethernet	5 x 1 Gigabit LAN
USB	4 x USB 3.2 Gen2x1, 2 x USB2.0, (1x 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	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 (iEP-9000E)	35W CPU: -40°C~70°C (-40°F~158°F) 65W CPU: -40°C~50°C (-40°F~122°F) 80W CPU: -40°C~45°C (-40°F~113°F) (w/ air flow 0.5~0.8 m/s)
Operating Temperature (iEPF-9000S-EX4)	35W CPU: -40°C~75°C (-40°F~167°F) 65W CPU: -40°C~55°C (-40°F~131°F) 80W CPU: -40°C~45°C (-40°F~113°F) (with FAN inside, without Add-on Card)(w/ air flow 0.5~0.8 m/s)
Fan Inside	No Yes
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 244mm (D) x 108.7mm (H)	202mm (W) x 290mm (D) x 209.3mm (H)
Net Weight	6.5kg	10kg

Others

OS Support	Windows 10 & Linux
TPM	TPM 2.0



iEP-5000G-000

iEP-5000G-010

iEP-5010G-010

iEP-5000G-011/012/013

iEP-5010G-011/012/013

KEY FEATURES

- Latest and Powerful Intel® Atom® x6000E Processor
- Fan-less and Rugged Design
- [Basic/5LAN SKU] Wide Temp. Operating : -40 °C to 70 °C
- [PoE SKU] Wide Temp. Operating : -40 °C to 50 °C
- [Basic/5LAN SKU] 6-36VDC Wide Range Power Inputs
- [PoE SKU] 19-36VDC 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
- [iEP-5000G Series] 5 x 1G LAN (2 Support IEEE 802.3AF PoE Ports)
- [iEP-5010G Series] 1 x 2.5G LAN, 4 x 1G LAN (2 Support IEEE 802.3AF PoE Ports)
- Support Intel® IN-Band ECC

SPECIFICATIONS

System Core

Processor	[iEP-5000G/5010G Series] Intel Atom® x6425RE, 4C, 1.9GHz, 12W [iEP-5010G Series] Intel Atom® x6212RE, 2C, 1.5GHz, 6W [iEP-5000G Series] 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	[iEP-5000G Series] 3 x Maxlinear GPY215 [iEP-5010G Series] 2 x Intel i210-IT, 1 x Intel i226-IT (Support TSN) [iEP-5000G/5010G Series] 2 x Intel i210-AT for PoE/5LAN SKU
PoE (Option)	2 x Intel i210-AT, each port supports IEEE 802.3AF PoE, PoE output max.15.4W/port (Support 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	4DI/4DOs (9-pin D-sub connector)
Audio	1 x Mic in 1 x Line out

iEP-5000G Series, iEP-5010G Series Industrial IoT Controller

Expansion

SIM	1 x Nano SIM Card slot
RF& Antenna (Option)	6 x SMA connector hole reserved, support for Basic SKU 4 x SMA connector hole reserved, support for PoE/5LAN SKU
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	[iEP-5000G-000] 1 x pluggable DC Jack for 6 to 36V DC input [iEP-5000G/5010G-010/012/013] 1 x 3-pin terminal block for 6 to 36V DC input [iEP-5000G/5010G-011] 1 x 3-pin terminal block for 19 to 36V DC input - OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	[Basic/5LAN SKU] Adapter 65W, AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 3.42A [PoE SKU] Adapter 120W, AC input 100-240Vac, 1.5A 50-60Hz, DC output 19V, 6.32A

Storage Device

SD Slot	1 x Micro SD card slot(SD Card specification version 3.01)
SATA(Optional)	[Basic SKU] 1 x 2.5" 9.5mm SATA3 SSD
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	1.3 kg
Mounting (Option)	DIN-Rail or Wall mounting

Environmental

Operating Temperature	[Basic/5LAN SKU] -40C ~ 70C (-40F~158F) [PoE SKU] -40C ~ 50C (-40F~122F) (with 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	Basic SKU			PoE SKU		5LAN-WIFI		5LAN SKU	
	iEP-5000G-000	iEP-5000G-010	iEP-5010G-010	iEP-5000G-011	iEP-5010G-011	iEP-5000G-012	iEP-5010G-012	iEP-5000G-013	iEP-5010G-013
CPU	Intel Atom x6425RE, 4C, 1.90 GHz SoC								
DC-IN type	DC JACK	3-pin Phoenix							
2.5 Storage	Support by additional 2.5 Bracket kit			Not Support					
WIFI/BT	Support						Not Support		
5G/4G LTE	Support by additional thermal kit			Not Support				Support by additional thermal kit	
Ethernet	3 x GPY215 1G		2 x I210-IT 1 x I226-IT	2 x I210-IT, 1 x I226-IT, 2 x I210-AT					
PoE	Not Support			Support IEEE 802.3AF PoE for Intel I210-AT		Not Support			
Adapter	[Option] Adapter 120W			[Option] Adapter 330W		[Option] Adapter 120W			

iEP-6010E Series

Industrial IoT Controller

Preliminary



- 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
 - Wide range operating temperature (-25 ~ 60°C)
 - 12V ~ 36V wide range DC input
 - 2nd DC IN Interface for USB Type-C power adaptor
 - Ultra Compact Size
 - Carrier board reserved 2pcs Dual Lane MIPI-CSI2 connectors****

SPECIFICATIONS

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	LVDT*(e)

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
Net Weight	Basic SKU: 1.3kg, 5G/POE SKU: 1.6kg
Mounting (Option)	Wall mounting or VESA mounting bracket (horizontal mounting for Basic SKU only) Wall mounting or Din Rail mounting bracket (vertical mounting for all SKU)

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)

iEP-6000E Series

Industrial IoT Controller

Processor System	
System on Module	NVIDIA Jetson Xavier NX SOM support (iEP-6001E-000) NVIDIA Jetson Nano SOM support (iEP-6003E-000)
Video	1 x HDMI 2.0 a/b
Memory	8GB 128-bit LPDDR4x (Jetson Xavier NX) 4GB 64-bit LPDDR4 (Jetson Nano)
I/O Interface	
Ethernet	1 x Gigabit LAN
Serial Port	1 x RS232
USB	2 x USB3.2 Gen1x1 1 x Micro USB 2.0 (Device mode only, for OS Flash)
Power Requirements	
DC Input	12V~19V DC input
AC to DC Adaptor (Option)	AC input 100-240Vac, 1.5A 50-60Hz, DC output 19V, 3.42A, 65W Adaptor

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)
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

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

OS Support	
OS Support	NVIDIA JetPack 5.1.1 *(e)

*(e) means estimation.
**Boot, shutdown or resume from suspend may fail randomly. It is current NVIDIA JetPack 5.1.1 limitation.
***Bluetooth function is disable and it is current NVIDIA JetPack 5.1.1 limitation for Intel AX210 Industrial SKU.
****MIPI-CSI2 camera need to be turned off before system going to sleep mode.
It is current NVIDIA JetPack 5.1.1 limitation.

Storage Device	
Micro SD Card	1 x Micro SD Card Slot (UHS-I/SDR-104)
eMMC	16 GB eMMC 5.1
Mechanical	
Dimensions	135 (W) x 44.5 (H) x 109.6 (D) mm
Function	Power on button with LED, OS Flash Button
Net Weight	0.7kg
Mounting (Option)	VESA mounting bracket Wall mounting bracket DIN Rail mounting bracket
Environmental	
Operating Temperature	0~60°C (16~18W for NV Xavier NX, air flow 0.5~0.8m/s)
EMC	CE and FCC Class A (EN55032 & 35) *(e)
Add-on Feature / OS Support	
OS Support	NVIDIA Jetpack 4.6

AI AOI Workload Consolidation Solution



iEP-9020E Robust Edge AIoT Platform



Intel® Edge Insights
for Industrial



Microsoft Azure IoT Edge
for Linux on Windows

The AI AOI workload consolidation solution enables smart factories by enhancing efficiency of manufacturing processes, reducing costs while increasing product quality and multiple competitive advantages. The AI AOI workload consolidation solution features the iEP-9020E Robust Edge AIoT Platform, powered by 13th generation Intel® Core™ processor preinstalled with Intel® Edge Insights for Industrial (EII) running on Microsoft Azure IoT Edge for Linux on Windows (EFLOW). Manufacturers can deploy AI workloads on Linux, such as AI applications enabled by Intel® OpenVINO™ toolkit, and other workloads for AI AOI on Windows, such as HMI, motion and vision controls etc., consolidating both Windows and Linux workloads under a small system footprint.

The process begins with motherboard collection of data on-site (Figure 1). ASRock Industrial's iEP-9020E utilizes Intel® Distribution of OpenVINO™ toolkit within Intel® EII software stack to run on EFLOW for AI inference and product inspection. The system determines product inspection result as "NG" for repair, "PASS" to proceed, or "MISS" for model optimization. This result gets sent to the AI server iEPF-9020S-EY4 for AI model training/re-training. Next, the AI model uploads to the cloud on Microsoft Azure to be deployed to iEP-9020E for updates on AI inference and product detection. The cycle ensures continued improvements for enhanced product quality results.

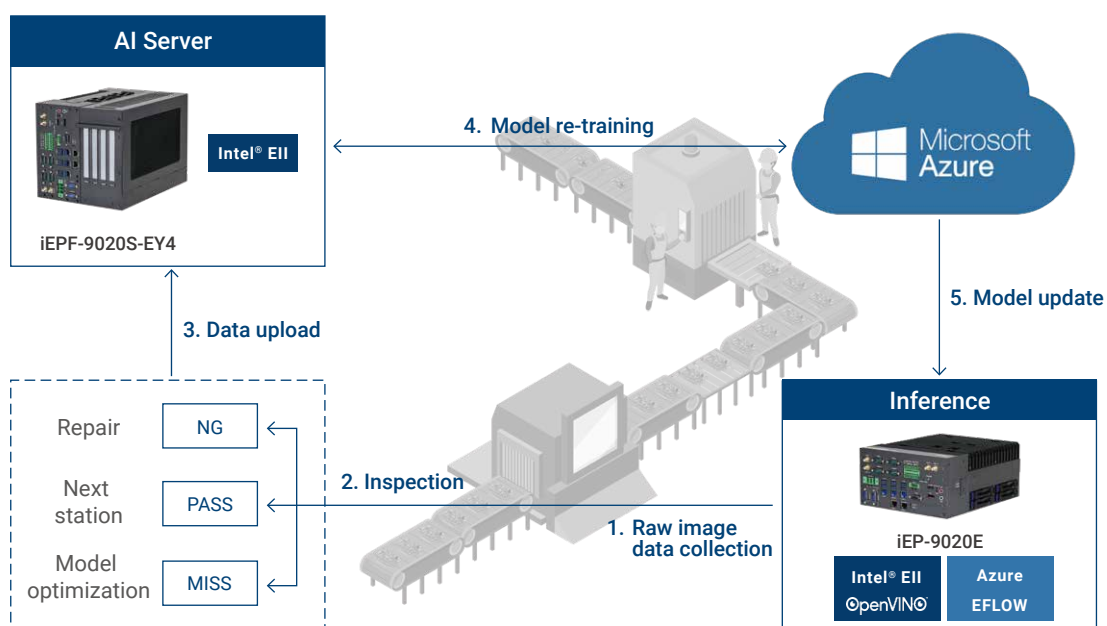


Figure 1: Edge AI AOI with iEP-9020E and iEPF-9020S-EY4

AI AOI with Edge to Cloud for Smart Factory

With edge-to-cloud capability, the AI AOI workload consolidation solution starts by providing results from AI inference and product inspection at the edge. Then, with Azure IoT Edge, the metadata gets uploaded onto Azure IoT Hub (Figure 2) to connect, monitor, and manage diverse IoT devices simultaneously with the device provisioning service (DPS) for automated real-time provision. After the uploading of metadata to the IoT Hub, the metadata is written into Azure SQL database through Azure Function. When abnormality or failure of AI AOI arises in the factory, the Event Grid reliably delivers the incidence to Logic APPs where the automated notifications are sent to relevant personnel, such as the production engineer via e-mail/Teams notification. This delivery process ensures maximum accuracy at scale. Designed to analyze and process large volumes of streaming data, the third course utilizes Stream Analytics to analyze insights and build reports in conjunction with Power BI for real-time dashboards. These user-friendly business applications facilitate efficient management and strategic decision-making across factories.

The Azure IoT Edge also uploads raw image data and abnormal AI AOI incidences in the factory to Azure Data Lake for storage. Then, Azure Machine Learning enables re-training, deployment of AI models, and Machine Learning lifecycle management. The container images across all types of Azure deployments are stored and managed in the Azure Container Registry. These can be docker sent to the IoT Hub for deployments of new training AI models to different edge devices remotely. The process helps eliminate bottlenecks, increase accuracy of the AOI procedures at scale, lower costs associated with accidents and defects for amplified efficiency and product quality.

Benefits for Manufacturing



Enable Linux AI workload consolidation with Windows



Improve defect detection accuracy & product quality



Enhance manufacturing process efficiency & scalability



Optimize OpEX & CapEX

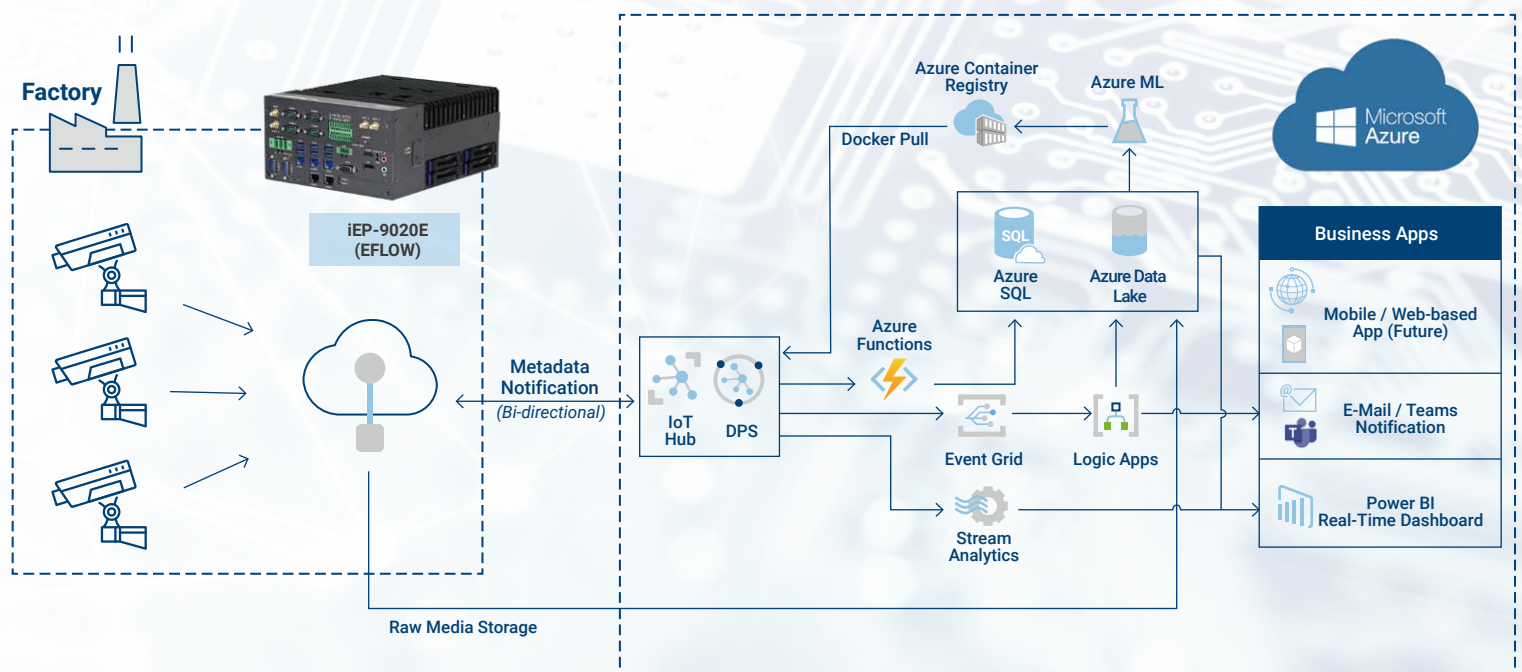


Figure 2: iEP-9020E Edge-to-Cloud Smart Factory Architecture

iEP-7020E Series



iEP-7020E-010 Series (Basic SKU) iEP-7020E-011 Series (PoE SKU) iEP-7020E-014 Series (5G SKU)
iEP-7020E-012 Series (5LAN-Wifi SKU)
iEP-7020E-013 Series (5LAN-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
- [Basic/5LAN/5G SKU] Wide Temp. Operating : -40 °C to 70 °C
- [PoE SKU] Wide Temp. Operating : -40 °C to 50 °C
- [Basic/5LAN/5G SKU] 6-36VDC Wide Range Power Inputs
- [PoE SKU] 19-36VDC Wide Range Power Inputs
- Intel® TCC and TSN Support for Real-Time Computing
- 3 x Intel i226-IT LAN (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 Embedded & Industrial Processor - Intel® Core™ i7-1365URE, 10C, 1.70GHz, 15W - Intel® Core™ i5-1345URE, 10C, 1.40GHz, 15W - Intel® Core™ i7-1370PRE, 14C, 1.90GHz, 28W - 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 (vPro Support) 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 Gen3/USB3.2 mode) - Support 4G LTE/5G module - Support SATA3 SSD storage for iEP-7020E-010 series only 1 x M.2 2230 Key E (CNVi / PCIe Gen3 / USB2.0 mode) - Support Wifi/BT module

Manageability / Security

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

Power Requirements

DC Input	For iEP-7020E-010/012/013/014 : - 1 x 3-pin terminal block (Phoenix type) for 9 to 36V DC input For iEP-7020E-011 : - 1 x 3-pin terminal block (Phoenix type) for 19 to 36V DC input OVP, UVP, OCP, plus 80V surge protection
AC to DC Adaptor (Option)	Adaptor 120W for iEP-7020E-010/012/013/014 only - AC input 100-240Vac, 1.8A 50-60Hz, DC output 19V, 6.32A, Adaptor 330W for iEP-7020E-011 only - AC input 100-240Vac, 4.2A 50-60Hz, DC output 24V, 13.75A,

Storage Device

SD Slot	1 x Micro SD card slot(SD Card specification version 3.01)
SATA	1 x 2.5" 9.5mm SATA3 SSD for iEP-7020E-010 series only
M.2 Socket	1 x M.2 2280 Key M (PCIe Gen3)

Mechanical

Dimensions	For iEP-7020E-010: 55(W) x 170(H) x 134(D) mm For iEP-7020E-011/012/013/014: 68(W) x 170(H) x 134(D) mm
Indicator	1 x Storage LED 1 x UD LED (User Define) 2 x Diagnostic LED
Function	1 x Power Button with LED
Net Weight	TBD
Mounting	For iEP-7020E-010 : Wall mount, VESA mount, DIN-Rail For iEP-7020E-011/012/013/014 : Wall mount, Din Rail

Environmental

Operating Temperature	iEP-7020E-010/012/013/014 : -40°C~70°C (-40°F~158°F) iEP-7020E-011 : -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	PoE	LAN
iEP-7020E-010 iEP-7021E-010 iEP-7022E-010 iEP-7023E-010	Basic SKU	i7-1365URE i5-1345URE i7-1370PRE i5-1350PRE	Default	Support	Not Support	3	Not Support
iEP-7020E-011 iEP-7021E-011 iEP-7022E-011 iEP-7023E-011	PoE SKU	i7-1365URE i5-1345URE i7-1370PRE i5-1350PRE	Not Support	Support	Not Support	5	Support
iEP-7020E-012 iEP-7021E-012 iEP-7022E-012 iEP-7023E-012	5LAN-WIFI SKU	i7-1365URE i5-1345URE i7-1370PRE i5-1350PRE	Not Support	Support	Not Support	5	Not Support
iEP-7020E-013 iEP-7021E-013 iEP-7022E-013 iEP-7023E-013	5LAN-5G SKU	i7-1365URE i5-1345URE i7-1370PRE i5-1350PRE	Not Support	Not Support	Support by additional kits	5	Not Support
iEP-7020E-014 iEP-7021E-014 iEP-7022E-014 iEP-7023E-014	5G-WIFI SKU	i7-1365URE i5-1345URE i7-1370PRE i5-1350PRE	Not Support	Support	Support by additional kits	3	Not Support