

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
- Support Wireless Time-Sensitive Networking (WTSN)

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, LAN1 support vPro (RJ45 8P8C) 2 x Intel® I210-AT for PoE SKU/5LAN SKU (RJ45 8P8C)
PoE (Option)	2 x Intel® I210-AT (RJ45 8P8C), PoE output max. 15.4W/port, each port supports IEEE 802.3AF PoE. (For PoE SKU)
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

Preliminary

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)	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)
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 1 x Power Button with LED
Net Weight	Basic SKU : 1.57 kg PoE SKU : 2.37kg 5LAN SKU : 2.27kg 5G SKU : 2.15kg
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

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	PoE SKU	i5-1350PRE	Not Support	Support	Not Support	5	Support
iEP-7020E-011		i7-1365URE					
iEP-7021E-011		i5-1345URE					
iEP-7022E-011	5LAN-WiFi SKU	i7-1370PRE	Not Support	Support	Not Support	5	Not Support
iEP-7023E-011		i5-1350PRE					
iEP-7020E-012		i7-1365URE					
iEP-7021E-012	5LAN-5G SKU	i5-1345URE	Not Support	Not Support	Support	5	Not Support
iEP-7022E-012		i7-1370PRE					
iEP-7023E-012		i5-1350PRE					
iEP-7020E-013	5G-WiFi SKU	i7-1365URE	Not Support	Support	Support	3	Not Support
iEP-7021E-013		i5-1345URE					
iEP-7022E-013		i7-1370PRE					
iEP-7023E-013	5G-WiFi SKU	i5-1350PRE	Not Support	Support	Support	3	Not Support
iEP-7020E-014		i7-1365URE					
iEP-7021E-014		i5-1345URE					
iEP-7022E-014	5G-WiFi SKU	i7-1370PRE	Not Support	Support	Support	3	Not Support
iEP-7023E-014		i5-1350PRE					
iEP-7020E-015		i7-1365URE					

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