

iEP-7020E Series Industrial IoT Controller

ASRock
— Industrial —

Preliminary



iEP-7020E-010 Series (Basic SKU) iEP-7020E-011 Series (PoE SKU) iEP-7020E-013 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
- Wide Temperature Operating (-40 °C to 70 °C)
- 9V ~ 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® i210-AT, 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)	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 3042/3052/2280 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 Debug 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	Basic SKU	PoE SKU	5LAN-WIFI SKU	5LAN-5G	5G SKU
	iEP-7020E-010	iEP-7020E-011	iEP-7020E-012	iEP-7020E-013	iEP-7020E-014
CPU	Intel® Core™ i7-1365URE, 10C, 1.70GHz, 15W				
2.5 Storage	default	N/A	N/A	N/A	N/A
WiFi/BT	Support*	Support*	Support*	N/A	Support*
4G LTE/5G	N/A	N/A	N/A	Support**	Support**
PoE	N/A	Support IEEE 802.3AF PoE for Intel i210-AT	N/A	N/A	N/A
Ethernet	3x Intel i226-IT	3x Intel i226-IT 2 x Intel i210-AT	3x Intel i226-IT 2 x Intel i210-AT	3x Intel i226-IT 2 x Intel i210-AT	3x Intel i226-IT

*Support by additional Wifi/BT kit

**Support by additional 4G LTE/5G kit

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