iEP-9020E

Compact Edge AIoT Platform

ASRock Industrial

Preliminary

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.

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)

Rear 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

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

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