# PEAK 890VL2

PICMG 1.3 Full-Size SBC with Intel® R680E/Q670E/H610E

Support 14th/13th/12th Generation Intel® Core™ i9/i7/i5/i3 Processor



## Main Features

- Intel® 14th/13th/12th Generation Core™ i9/i7/i5/i3 processor
- Support Intel® R680E/Q670E/H610E PCH chipset PICMG 1.3 specification
- Support Dual channel DDR5 with ECC/Non-ECC DIMM
- Support multiple display for Mini-DP, HDMI®, VGA
- Support SATA 3.0 W/RAID 0,1,5,10/PCIe 4.0 M.2 NVMe
- Support Intel® vPro™ technology with Intel® AMT
- Support on board TPM 2.0

## Product Overview

The PEAK890 series is a PICMG1.3 full-size single-board computing, powered by the Intel® 14th/13th/12th generation Core™ i9/ i7/ i5/ i3 processor featuring Performance-cores and Efficient-cores to enhance IoT workload consolidation and multitasking. It comes with Dual DDR5 DIMM socket up to 64GB 4800MHz with ECC (R680E) and Non-ECC for faster data transfer and lower power efficiency. PEAK890 SKU in Q680E/ R680E features SATA 3.0 with RAID 0,1,5 and 10 to support data protection. Furthermore, the advanced storage capabilities with Intel® RST features PCIe Gen4 x4 on M.2 (2280) to maximizes storage performance and it also features an integrated Intel® AMT for easier maintenance and on-board TPM 2.0 to elevate the security. PEAK890 W/H610 SKU provides cost effective solution.

PEAK890 series with high performance platform and high flexibility I/O expansion with wide selections of backplane fits AI application.

## Specifications

### CPU Support
- Intel® 14th/13th/12th generation Core™ i9/i7/i5/i3/Pentium processor, (65W/35W) TDP, LGA1700 Socket

### Main Memory
- 2 x SO-DIMM, support Dual channel DDR5 ECC/Non ECC 4800MHz (Max. 64GB)

### Platform Control Hub
- Intel® R680E/Q670E/H610E express chipset PCH

### BIOS
- AMI UEFI system BIOS
- 256M Bit SPI depended on AMT function
- Dual BIOS for Four PCIe x1 and One PCIe x4

### Display
- Integrated Intel® UHD Graphics 770 driven by Xe Architecture
- Support independent triple display
- VGA: resolution up to 1920*1200 pixels@60Hz (via optional cable)
- HDMI®: resolution up to 4096*2304 pixels@60Hz
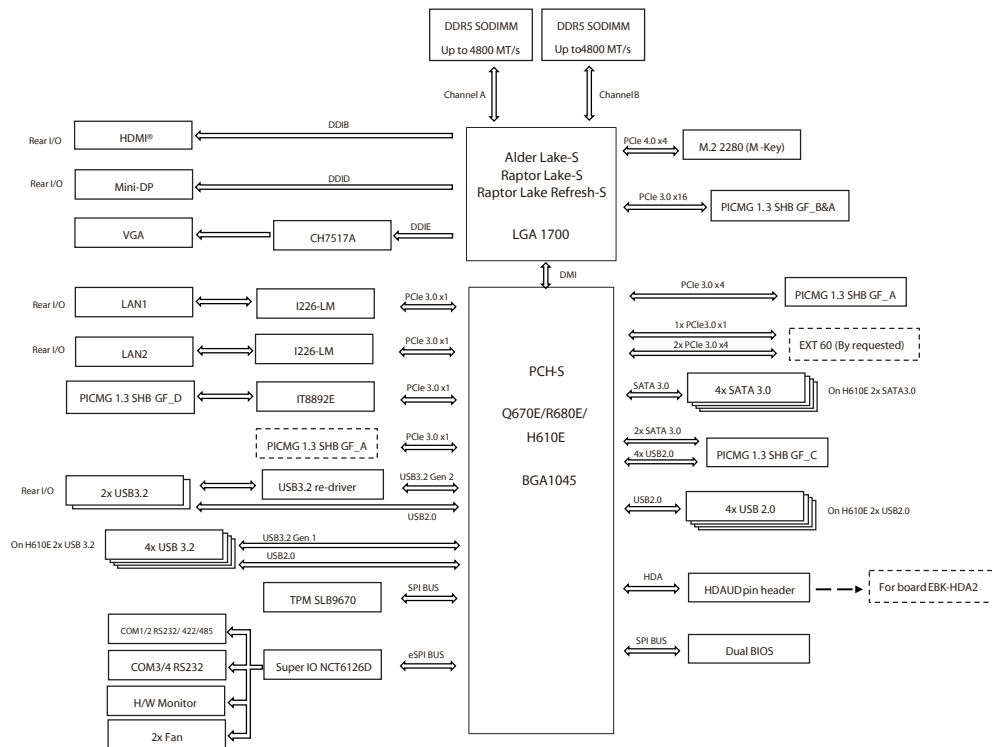- Mini DP: resolution up to 4096*2304 pixels@60Hz

### R680E/ Q670E PCH
- Storage
  - 4 x SATA 7P connector
  - 2 x SATA through to PICMG1.3 connector C to Backplane
  - 1 x M.2 2280 Key M PCIe 4.0 x4
  - Support Intel® Rapid Storage Technology
  - Support SATA RAID 0,1,5,10
- USB 3.2
  - 2-Port USB 3.2 Gen2 through I/O bracket
  - 4-Port USB 3.2 Gen1 through 2.0mm box header
  - Backward compatible for USB 2.0
- USB 2.0
  - 4-Port USB 2.0 through 2.0mm pin header
  - 4-Port USB 2.0 through PICMG 1.3 connector C to backplane

### H610E PCH
- Storage
  - 2 x SATA 7P connector
  - 2 x SATA through PICMG1.3 connector C to backplane
- USB3.2
  - 2-Port USB 3.2 Gen2 through I/O bracket
  - 2-Port USB 3.2 Gen1 through 2.0mm box header
  - Backward compatible for USB 2.0
- USB 2.0
  - 2-Port USB 2.0 through 2.0 pin header
  - 4-Port USB 2.0 through PICMG 1.3 connector C to backplane

NEXCOM

# Dimension Drawing



## On-board LAN
- 2 x Intel ® WGI226LM 2.5GbE Controller support Intel® AMT with Intel vPro® (LAN1 Only)
- 2 x RJ45 with LED connector
- Support boot from LAN (PXE)
- Support wake on LAN

## Internal I/O
- 2 x RS-232/485/422 with auto flow control, 2 x RS-232
- 1 x CPU Smart Fan, 1 x System Smart Fan
- WDT 1 ~ 255 steps by software program
- 1 x Front panel connector
- 1 x ATX 4-pin power connector

## Edge I/O Interface
- 2 x USB 3.2 port
- 2 x 2.5Gb LAN port
- 1 x HDMI® 1.4 connector
- 1 x Mini DP connector

## Audio
- High definition audio interface

## Expansion Interface
- One PCIe Gen3.0 x16/two PCIe Gen3.0 x8 and one PCIe Gen3.0 x4 to backplane (R680E/Q670E)
- One PCIe Gen3.0 x16 and one PCIe Gen3.0 x4 to backplane (H610E)
- Four PCI through PICMG 1.3 connector D to backplane

## Power Requirements
- Power source from backplane through golden finger and AUX +12V
- Support ATX/AT function by jumper setting
- BIOS default :ATX MODE

## Mechanical & Environment
- Operating temperature: 0℃ ~ 60℃
- Storage temperature: -20 ~ 85℃
- Relative humidity:
  - Operating: 0%~90%, non-condensing
  - Non-operating: 0%~95%, non-condensing

## Dimension
- 338.58 mm x 126.39 mm, 8 layers

## Operating System
- Windows® 11 IoT Enterprise 22H2
- Windows® 10 IoT Ent LTSC 2022
- Linux for Ubuntu

## Certificate
- CE/FCC Class A compliant

# Ordering Information

- **PEAK 890VL2 –R (P/N: 10P00089002X0)**
  PICMG 1.3 full-size SBC, R680E, Intel® LGA1700, DDR5 DIMM, supports triple display, LAN x2, USB 3.2 x6, SATA 3.0 x4, M.2 (supports PCIe storage)

- **PEAK 890VL2 –Q (P/N: 10P00089000X0)**
  PICMG 1.3 full-size SBC, Q670E, Intel® LGA1700, DDR5 DIMM, supports triple display, LAN x2, USB 3.2 x6, SATA 3.0 x4, M.2 (supports PCIe storage)

- **PEAK 890VL2 –H (P/N: 10P00089003X0)**
  PICMG 1.3 full-size SBC, H610E, Intel® LGA1700, DDR5 DIMM, supports triple display, LAN x2, USB 3.2 x4, SATA 3.0 x2