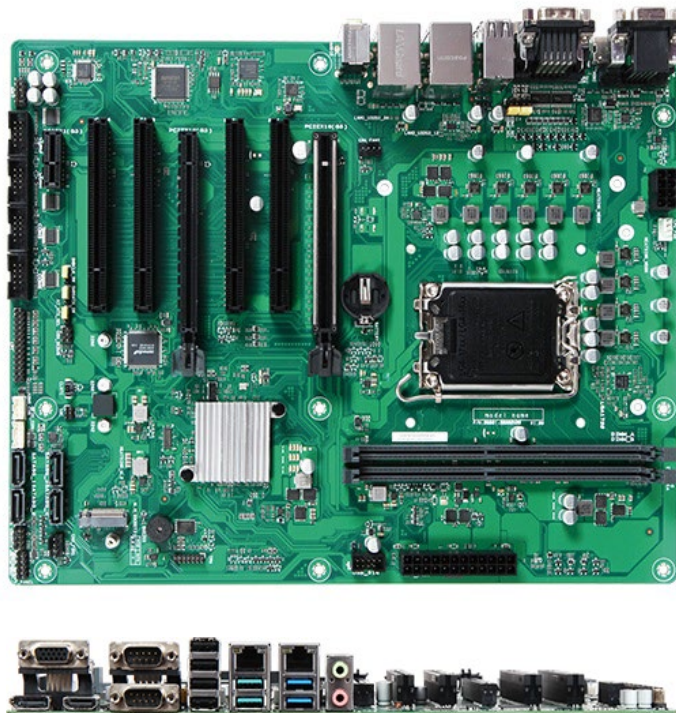# The4thware Industrial Board (ATX)

12th/13th Generation Intel Core Series Platform

T4WP-H610E-ATX

PRODUCT SPECIFICATION

Specification	
Processor	12th Generation Intel® Core™/13th Generation Intel® Core™ processors in LGA1700 package
Chipset	Intel® H610E
BIOS	AMI uEFI BIOS (SPI ROM)
Memory	Support up to 64GB DDR4 Non-ECC on two Long-DIMM sockets, up to 3200MHz
Storage Devices	4x SATAIII ports
Watchdog Timer	Programmable by embedded controller
Hardware Monitoring	System monitor (Voltage, Fan Speed and Temperature)
Expansion Interface	2x PCIe x16 slots(1x PCIe x4 signal) 1x PCIe x1 slots , 4x PCI slots 1x M.2 (Key M) type 2242/2260/2280(SATA/PCIe x1 mode)
Super I/O	Nuvoton NCT6126D
Audio	Audio jack on rear I/O with Line-out/Mic-in via Realtek ALC897 audio controller
Ethernet	Intel® I219V and Intel® I210AT Ethernet controller 2x RJ45 connectors on rear I/O
Serial Port	2x RS232/422/485 ports, one on rear I/O, one on board header 4x RS232 ports on pin header
USB	4x USB3.2 (Gen2) and 4x USB 2.0 ports on rear I/O 2x USB2.0 on pin header
GPIO	8-bit configurable controlled by embedded controller
Graphic Controller	Intel® UHD Graphics 630 supporting DirectX 12, OpenGL 4.5
Display Interface	- DP: One DP port on rear I/O, resolution up to 4096x2160 - VGA: One VGA port on rear I/O, resolution up to 1920x1200 - HDMI: One HDMI connector on rear I/O, resolution up to 4096x2160
Dimension	304.8mm(L) x 243.8mm(W) x 1.6mm(H)
Power Supply	ATX
Environment	- Operation temperature: 0~60˚C - Storage temperature: - 0~80˚C 2 - Relative humidity: 5~95%, non-condensing
MTBF	Over 100,000 hours at 40°C

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