

# The4thware Industrial Board (ATX)

12<sup>th</sup>/13<sup>th</sup> Generation Intel Core Series Platform

T4WA-Q670E-ATX



## PRODUCT SPECIFICATION

SYSTEM	
PROCESSOR	12th/13th Generation Intel® Core™ LGA1700 Socket Processors (formerly Alder Lake/Raptor Lake), TDP Max 125W
CHIPSET	Intel® Q670E Chipset
MEMORY	DDR5 4000MHz DIMM x 4, up to 128GB Non-ECC, Unbuffered Memory, Dual-Channel Memory Architecture
I/O CHIPSET	NCT6126D
ETHERNET	Intel® PHY I219-LM Giga LAN x 1 (supports Intel® AMT 12.0) Intel® I210-AT Giga LAN x 1 Intel® I225-LM Giga LAN x 1 (Optional) RJ-45 x 2 (Optional: RJ-45 x 3, LAN 3 with USB 3.2 Gen 2 x 1)
AUDIO	Realtek ALC897 6-Channel High Definition Audio CODEC
TPM	TPM 2.0 onboard
EXPANSION SLOT	PCIe Gen 5 [x16] x 1 (16 Lanes) PCIe Gen 3 [x1] x 1 (1 Lane, Open Slot) PCIe Gen 4 [x4] x 1 (4 Lanes, Open Slot) PCIe Gen 4 [x16] x 1 (4 lanes) PCI Slot x 3 M.2 3042/3052 B-Key x 1 (PCIe 3.0 [x1]/USB 3.2 Gen 1) Mini PCIe Slot x 1 (PCIe 3.0/USB 2.0) Micro SIM Card Slot x 1 (M.2 B-Key or Mini PCIe Slot)
BIOS	256Mbit Flash ROM, AMI BIOS
H/W MONITOR	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V/3.3V/12V, Fan Monitor on CPU/Chassis
WATCHDOG TIMER	1~255 step by software program
SMART FAN CONTROL	CPU Fan x 1/Chassis Fan x 3
WAKE ON LAN/ PXE	Yes (WOL/PXE)
POWER STATE	S3, S4, S5
GRAPHICS	
GRAPHICS CHIPSET	Intel® Graphics Media Accelerator
GRAPHICS MULTI DISPLAY	HDMI+HDMI+DP+DP, HDMI+HDMI+DP+VGA, HDMI+VGA+DP+DP
VGA	Up to 1920 x 1200 @60Hz (via IT6516B)
DVI	—
HDMI	HDMI 2.0, up to 4096 x 2160 @60/30Hz, with Digital Audio

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DISPLAYPORT	DP 1.4, up to 4096 x 2160 @24Hz or 3840 x 2160 @60 Hz, with Digital Audio
LVDS	—
EDP	—
BACKLIGHT CONTROL	—
<b>ENVIRONMENTAL &amp; POWER &amp; ME</b>	
BATTERY	Lithium battery
POWER REQUIREMENT	24-pin ATX Connector x 1, 8-pin ATX 12V Power Connector x 1
OPERATING TEMPERATURE	32°F ~ 140°F (0°C ~ 60°C)
STORAGE TEMPERATURE	-40°F ~ 185°F (-40°C ~ 85°C)
OPERATING HUMIDITY	0%~90%RH, non-condensing
CERTIFICATION	CE & FCC Class A
FORM FACTOR	ATX Form Factor, 12" x 9.6" (305mm x 244mm)
WEIGHT	1.76 lb (0.8 Kg)
MTBF (HOURS)	281,760
<b>REAR PANEL I/O PORTS</b>	
USB	USB 3.2 Gen 2 x 2 (10Gbps, Optional: x 3 units if with LAN 3 I225-LM) USB 3.2 Gen 1 x 2 (5Gbps) USB Type C x 1 (5Gbps, 5V, 1.5A, Optional) (All ports are bootable, can be deactivated per BIOS function; USB Power switchable feature)
DISPLAY I/O	HDMI 2.0 x 2, DP 1.4 x 2
AUDIO I/O	Audio Jack x 3, Line-in, Mic-in, Line-out
LAN I/O	RJ-45 LAN x 2 (Optional: RJ-45 x 3)
SERIAL PORT	DB-9 COM x 1 (supports RS-232/422/485, 5V/12V/RI)
PS/2 PORT	—
OTHERS	—

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### INTERNAL I/O CONNECTORS

STORAGE	SATA III x 8, supports RAID 0/1/5/10 M.2 2280 M-Key x 1 (PCIe Gen 4.0, 4 Lanes) M.2 2242/80 M-Key x 1 (PCIe Gen 3.0 1 Lane)
USB	USB 3.0 Box Header x 1 (2x5P, p=2.54mm), supports USB 3.2 Gen 1 x 2 (USB Power switchable feature) USB 2.0 Header x 1 (2x5P, p=2.54mm) supports USB 2.0 x 2 (USB Power switchable feature) USB 2.0 x 1 (Vertical Type-A)
DISPLAY I/O	VGA Header x 1
AUDIO I/O	Speaker Header (Line-out), AAFP x 1
SERIAL PORT	RS-232 Header x 5
PS/2 PORT	—
PARALLEL PORT	—
DIO	8-bit Digital I/O Interface x 1 (In/Out Programmable)
FAN	4-pin CPU Fan Connector x 1 (PWM Mode) 4-pin Chassis Fan Connector x 3 (PWM Mode)
POWER	—
OTHERS	Chassis Intrusion x 1, AT/ATX Mode Select Jumper x 1, Front Panel Header x 1 Clear CMOS Jumper x 1, Buzzer Onboard x 1, 3-pin ME Lock Header x 1
OS	
OS SUPPORT	Windows® 10 64-bit, Windows® 11 64-bit