

The4thware Industrial Board (MATX)

12th/13th Generation Intel Core Series Platform

T4WA-Q670-MATX



PRODUCT SPECIFICATION

SYSTEM	
PROCESSOR	12th/13th Generation Intel® Core™ LGA1700 Socket Processors (formerly Alder Lake/Raptor Lake), TDP Max 125W
CHIPSET	Intel® Q670 Express Chipset
MEMORY	DDR5 4000MHz DIMM x 4, Up to 128GB Non-ECC, Un-buffered Memory, Dual-Channel Memory Architecture
I/O CHIPSET	NCT6126D
ETHERNET	RJ-45 GbE LAN x 1 (Intel® PHY I219-LM, supports Intel® AMT 12.0) RJ-45 GbE LAN x 1 (Intel® I210-AT) RJ-45 2.5GbE LAN x 2 (Intel® I225-LM, Optional)
AUDIO	Realtek ALC897 6-Channel High Definition Audio CODEC
TPM	TPM 2.0 onboard
EXPANSION SLOT	PCIe Gen 5 [x16] x 1 (8 Lanes/8 Lanes when dual-use PCIe [x16] slot) PCIe Gen 3 [x4] x 1 (2 Lanes, Open Slot) PCIe Gen 5 [x16] x 1 (8 Lanes) PCIe Gen 4 [x4] x 1 (4 Lanes) M.2 3042/3052/2242 B-Key x 1 (PCIe 3.0 [x1]/USB 3.2 Gen 1) + Micro SIM Slot x 1 M.2 2230 E-Key x 1 (PCIe 3.0 [x1]/USB 2.0)
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 2 (the 3rd Chassis Fan is DC Fan)
WAKE ON LAN/ PXE	Yes (WOL / PXE)
POWER STATE	S3, S4, S5
GRAPHICS	
GRAPHICS CHIPSET	Intel® Graphics Media Accelerator
GRAPHICS MULTI DISPLAY	HDMI+VGA+DP+LVDS/eDP
VGA	Up to 1920 x 1200 @60Hz (via IT6516B)
DVI	—
HDMI	HDMI 2.0 x 1, up to 4096 x 2160 @60/30 Hz, with Digital Audio
DISPLAYPORT	DP 1.4 x 1, up to 4096 x 2160 @24 Hz or 3840 x 2160 @60 Hz, with Digital Audio
LVDS	18/24-bit Dual-Channel LVDS x 1, up to 1920 x 1080 @60 Hz
EDP	eDP x 1, up to 3840 x 2160 @30 Hz

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BACKLIGHT CONTROL	Yes
ENVIRONMENTAL & POWER & ME	
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% relative humidity, non-condensing
CERTIFICATION	CE & FCC Class A
FORM FACTOR	Micro-ATX Form Factor, 9.6"x9.6" (244mmx244mm)
WEIGHT	1.76 lb (0.8 Kg)
MTBF (HOURS)	267,950
REAR PANEL I/O PORTS	
USB	USB 3.2 Gen 2 x 4 (10Gbps) USB Type-C x 1 (Optional, 20Gbps, 5V, 3A) (All ports are bootable, can be deactivated per BIOS function; USB Power switchable feature)
DISPLAY I/O	HDMI 2.0 x 1, VGA x 1, DP 1.4 x 1
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 4)
SERIAL PORT	DB-9 x 1 (Supports RS-232/422/485, 5V/12V/RI)
PS/2 PORT	—
OTHERS	—
INTERNAL I/O CONNECTORS	
STORAGE	SATA III x 8, supports RAID 0, 1, 5, 10 M.2 2242/2280 M-Key x 2 (PCIe Gen 4.0, 4 Lanes, supports RAID 0, 1, 5, 10)
USB	USB 3.0 x 1 (2x5P 2.54mm Pitch Box Header, supports USB 3.2 Gen 1 x 2) USB 2.0 Header x 1 (2x5P 2.54mm Pitch Box Header, supports USB 2.0 x 2) USB 3.2 Gen 1 x 1 (Type-A, vertical) (All Headers support USB Power switchable feature)
DISPLAY I/O	—
AUDIO I/O	Speaker header(Line-out) x 1, AAFP x 1
SERIAL PORT	RS-232 x 5 (via 1x9P Header)
PS/2 PORT	—

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PARALLEL PORT	—
DIO	8-bit Digital I/O interface x 1
FAN	4-pin CPU Fan Connector x 1 (PWM Mode) 4-pin Chassis Fan connector x 2 (PWM Mode) 3-pin Chassis Fan connector x 1 (DC Mode)
POWER	—
OTHERS	Chassis Intrusion x 1 AT/ATX Mode Select Jumper x 1 Front Panel Header x 1 Clear CMOS Jumper x 1 Onboard Buzzer x 1 3-pin ME Lock Header x 1 LED Header for Ethernet x 2 (Optional: LED Header x 4 when RJ-45 x 4)
OS	
OS SUPPORT	Windows® 10 64-bit, Windows® 11 64-bit