

# The4thware Industrial Board (MITX)

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

T4WA-Q670E-MITX2



## PRODUCT SPECIFICATION

SYSTEM	
PROCESSOR	12th & 13th Gen Intel® Core™ Processors (Raptor Lake-S/Alder Lake-S)
CHIPSET	Intel® Q670E
MEMORY	Dual-Channel DDR5 4800MHz SODIMM x 2 (Non-ECC, Max. 64GB)
I/O CHIPSET	Intel® UHD Graphics
ETHERNET	Intel® I219-LM GbE LAN x 1 Intel® I210-AT GbE LAN x 1
AUDIO	Realtek® ALC897 with Amp.
TPM	Onboard TPM 2.0 IC
EXPANSION SLOT	M.2 3042/3052 B-Key x 1 (PCIe [x1], USB 3.2 Gen 1/USB 2.0) M.2 2230 E-Key x 1 (PCIe [x1], Optional: dual PCIe [x1], USB 2.0)
BIOS	256Mbit Flash ROM, AMI BIOS
H/W MONITOR	Temperature Monitor on CPU/Chassis, Voltage Monitor on Vcore/5V, Fan Monitor on CPU/Chassis
WATCHDOG TIMER	1~255 steps by software program
SMART FAN CONTROL	CPU Fan/ System Fan
WAKE ON LAN/ PXE	Yes (WOL / PXE)
POWER STATE	S3, S4, S5
GRAPHICS	
GRAPHICS CHIPSET	Intel® UHD Graphics
GRAPHICS MULTI DISPLAY	HDMI x 2 + DP x 2, HDMI x 2 + DP x 1 + LVDS x 1, HDMI x 2 + DP x 1 + eDP x 1, HDMI x 1 + DP x 2 + LVDS x 1, HDMI x 1 + DP x 2 + eDP x 1
VGA	—
DVI	—
HDMI	HDMI 2.0, Up to 4096 x 2160 @60Hz
DISPLAYPORT	DP 1.2, Up to 4096 x 2160 @60Hz
LVDS	Dual-Channel 18/24 bit LVDS via CH7513, up to 1920 x 1080 @60 Hz, colay eDP
EDP	Up to 1920 x 1080 @60Hz
BACKLIGHT CONTROL	PWM

## PRODUCT SPECIFICATION

### ENVIRONMENTAL & POWER & ME

BATTERY	Lithium battery
POWER REQUIREMENT	DC 12V
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
FORM FACTOR	Mini-ITX: 6.7" x 6.7" (170mm x 170mm)
WEIGHT	1.1 lb (0.5 Kg)
MTBF (HOURS)	—

### REAR I/O PORTS

USB	USB 3.2 Gen 2 x 4
DISPLAY I/O	HDMI x 2, DP x 2
AUDIO I/O	Line-out x 1
LAN I/O	RJ-45 LAN Port x 2
SERIAL PORT	—
PS/2 PORT	—
OTHERS	—

### INTERNAL I/O CONNECTORS

STORAGE	SATA III x 2 with SATA Power Connector x 2 (1A) M.2 2280 M-Key (PCIe [x4]/NVMe) x 1
USB	USB 2.0 x 4 via 2x5P Header x 2
DISPLAY I/O	40-pin LVDs/eDP connector x 1 with Inverter
AUDIO I/O	HD Audio x 1 (via AAFP Header), Internal Speaker x 1 (2W/40hmΩ)

## PRODUCT SPECIFICATION

SERIAL PORT	COM Box Header x 1 (RS-232/422/485) COM Box Header x 1 (RS-232)
PS/2 PORT	—
PARALLEL PORT	—
DIO	Digital I/O box header x 1
FAN	4-pin CPU Fan connector x 1, 4-pin System Fan connector x 1
POWER	—
OTHERS	Front Panel connector x 1, Chassis Intrusion x 1, Buzzer onboard x 1, CMOS jumper x 1
OS	
OS SUPPORT	Windows® 10 64-bit, Windows® 11 64bit