

# The4thware Industrial Board (MATX)

9<sup>th</sup> Generation Intel Xeon E Series Platform

T4WARR-C246-MATX1



## PRODUCT SPECIFICATION

Physical Status	
Form Factor	Micro-ATX
Dimensions	9.6" x 9.6" (244 mm x244 mm)
Processor System	
CPU	Supports Intel® Xeon® E-2100/E-2200 Series Processors
Socket	Single Socket LGA 1151
Thermal Design Power	Max. 95W
Chipset	Intel® C242
System Memory	
Supported DIMM Quantity	4 DIMM slots
Supported Type	Dual Channel memory technology DDR4 288-pin ECC/non-ECC UDIMM
Max. Capacity per DIMM	32GB
Max. DIMM Frequency	ECC/Non-ECC UDIMM: 2666/2400/2133 MHz
Voltage	1.2V
PCIe Expansion Slots (SLOT7 close to CPU)	
PCIe x 16	- SLOT6: PCIe3.0 x16, auto switch to x8 when SLOT4 is occupied
PCIe x 8	- SLOT4: PCIe3.0 x8
PCIe x 4	- SLOT5: PCIe3.0 x4
Other PCIe Expansion Connectors	
M.2 slot	- 1 (2230/2242/2260/2280, Supports PCIE3.0(X2)/SATA3)
SATA/SAS Storage	
PCH Built-in Storage	- Intel® C242: 6x SATA3 6Gb/s (SATA0-5, SATA0 supports SATA DOM, and i/s shared with M.2(PCIE3.0(x2))/ SATA3)
Ethernet	
Interface	- 1000 /100 /10 Mbps
Additional GbE Controller	- 2 x RJ45 GLAN by Intel® i210 - 1 x RJ45 Dedicated IPMI LAN port - Supports Wake-On-LAN - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN with Teaming function - Supports PXE - LAN1 supports NCSI
Server Management	
BMC Controller	- ASPEED AST2500
IPMI Dedicated GLAN	- 1 x Realtek RTL8211E for dedicated management GLAN
Features	- Watch Dog - NMI

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Graphics	
Controller	- ASPEED AST2500
VRAM	- DDR4 16MB
Rear I/O	
UID Button/LED	- 1
VGA Port	- 1 x D-Sub
Serial Port	- 1
USB 3.2 Gen2 Port	- 4 Type-A (USB3.2 Gen2)
RJ45	- 2 x RJ45 Gigabit Ethernet LAN ports - 1 x RJ45 Dedicated IPMI LAN port - LAN Ports with LED (ACT/LINK LED and SPEED LED)
Internal Connector/Headers	
Power Connector	- 1x (24-pin) + 1x (8-pin)
Auxiliary Panel Header	- 1 (includes chassis intrusion, location button & LED, and front LAN LED)
System Panel	- 1 (RST, PWRBTN, HDDLED, PWRLED)
Speaker Header	- 1(4pin)
Buzzer	- 1
Fan Header	- 6(1CPU/3Front/2Rear)
Thermal Sensor Header	- 1
TPM Header	- 1
SGPIO Header	- 2
SMBus header	- 1
PMBus header	- 1
IPMB Header	- 1
Clear CMOS	- 1 (short pin)
ME/SPS Recovery	- 1
USB 3.2 (Gen1) Header	- 1 (19-pin, 2 USB3.2 Gen1)
USB 2.0 Header	- 1 (9-pin, 2 USB2.0)
NMI Header	- 1
LED Indicators	
80 Debug Port LED	- N/A
System BIOS	
BIOS Type	- 256 Mb AMI UEFI Legal BIOS
BIOS Features	- Plug and Play (PnP) - ACPI 2.0 Compliance Wake Up Events - SMBIOS 2.8.0 Support - ASRock Rack Instant Flash

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Hardware Monitor	
Temperature	<ul style="list-style-type: none"> <li>- CPU/PCH Temperature Sensing</li> <li>- MB/Card Side/TR1 Temperature Sensing</li> </ul>
Fan	<ul style="list-style-type: none"> <li>- CPU/Rear/Front Fan Tachometer</li> <li>- CPU Quiet Fan (Allow CPU Fan Speed Auto-Adjust by CPU Temperature)</li> <li>- CPU/Rear/Front Fan Multi-Speed Control</li> </ul>
Voltage	<ul style="list-style-type: none"> <li>- Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore, VCCM, VPPM, VCCIO, VCCSA, VCCST_SFR, V1.0M, 3VSB, 5VSB, VBAT</li> </ul>
Supported OS	
OS	<p>Microsoft® Windows®</p> <ul style="list-style-type: none"> <li>- Server 2016 (64 bit)</li> <li>- Server 2019 (64 bit)</li> </ul> <p>Linux</p> <ul style="list-style-type: none"> <li>- RedHat Enterprise Linux Server 6.9 (64 bit) / 7.4 (64 bit)</li> <li>- SUSE Enterprise Linux Server 11 SP4 (64 bit) / 12 SP3 (64 bit)</li> <li>- Ubuntu 15.10 (64 bit) / 16.04 (64 bit)</li> </ul>
Environment	
Temperature	Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C
Humidity	- Non operation humidity: 20% ~ 90% ( Non condensing)