

The4thware Industrial Board (MATX)

10th Generation Intel Core Series Platform

T4WARR-Z490-MATX



PRODUCT SPECIFICATION

Physical Status	
Form Factor	Micro-ATX
Dimensions	9.6" x 9.6" (244 mm x 244 mm)
Processor System	
CPU	Support Intel® 10th Gen. Core™ i9/i7/i5/i3, Pentium, Celeron® Series Processors
Chipset	Intel® Z490
System Memory	
Supported DIMM Quantity	4 x 288-pin DDR4 DIMM slots Support up to 128GB DDR4 non-ECC UDIMM
Supported Type	Dual Channel DDR4 memory technology Supports DDR4 non-ECC UDIMM
Max. Capacity per DIMM	non-ECC UDIMM : 32GB, 16GB, 8GB, 4GB
Max. DIMM Frequency	Non-ECC UDIMM: 2933*/2666/2400 MHz *Core™ (i9/i7) support DDR4 up to 2933; Core™ (i5/i3), Pentium® and Celeron® support DDR4 up to 2666.
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 (Physical x16, EE x16/x8 (from CPU), shared with SLOT4)
PCIe x 8	SLOT4: PCIe3.0 x8 (Physical x8, EE x0/x8 (from CPU), shared with SLOT6)
PCIe x 1	SLOT7: PCIe3.0 x1 (Physical x1, EEx1 (from PCH))
Other PCIe Expansion Connectors	
M.2 slot	2 (M2_1: 2260/2280/22110, Supports PCIE3.0(x4); M2_2:2260/2280, Supports PCIE3.0(x4))* *The M.2 slot (M2_2) is shared with the PCIE5 slot (BTO). When M2_2 is populated with a M.2 PCIe module, PCIE5 will be disabled.
SATA/SAS Storage	
PCH Built-in Storage	6 x SATA3 6Gb/s (SATA0-5, SATA_0 supports SATA DOM)
Ethernet	
Interface	10000/1000 /100 Mbps
Additional GbE Controller	2 x RJ45 GLAN by Intel® i210 2 x RJ45 10G base-T by Intel® X710-AT2 1 x RJ45 Dedicated IPMI LAN port by RTL8211E Supports Wake-On-LAN Supports Energy Efficient Ethernet 802.3az Supports Dual LAN with Teaming function Supports PXE LAN1 supports NCSI

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Server Management	
BMC Controller	ASPEED AST2500
IPMI Dedicated GLAN	1 x Realtek RTL8211E for dedicated management GLAN
Features	Watch Dog NMI
Graphics	
Controller	ASPEED AST2500
VRAM	DDR4 256MB
Rear I/O	
UID Button/LED	1
VGA Port	1 x D-Sub, 1 HDMI
Serial Port	1
USB 3.2 Gen1 Port	2 Type-A (USB3.2 Gen1)
USB 3.2 Gen2 Port	2 Type-A (USB3.2 Gen2)
RJ45	4 +1 RJ45 Gigabit Ethernet LAN ports LAN Ports with LED (ACT/LINK LED and SPEED LED)
Internal Connector/Headers	
Power Connector	1x (24-pin) + 1x (8-pin)+ 1x (4-pin)
Auxiliary Panel Header	1 (includes chassis intrusion, location button & LED, and front LAN LED)
System Panel	1 (RST, PWRBTN, HDDLED, PWRLED)
VGA header	1
Buzzer	1
Fan Header	7 (1CPU/4Front/2Rear)
Thermal Sensor Header	1
TPM Header	1 (13-pin, SPI)
SGPIO Header	1
SMBus header	1
PMBus header	1
IPMB Header	1
Clear CMOS	1 (short pin)
ME/SPS Recovery	1
Front Lan LED Connector	1

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USB 3.2 (Gen1) Header	1 (19-pin, 2 USB3.2 Gen1)
USB 2.0 Header	1 (9-pin, 2 USB 2.0)
NMI Header	1
LED Indicators	
80 Debug Port LED	1
Fan Fail LED	7 (header)
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
Hardware Monitor	
Temperature	CPU Temperature Sensing MB/Card side/TR1 Temperature Sensing
Fan	CPU/Rear/Front Fan Tachometer CPU Quiet Fan (Allow Chassis Fan Speed Auto-Adjust by CPU Temperature) CPU/Rear/Front Fan Multi-Speed Control
Voltage	Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore, DRAM, V1.0M,+BAT, 3VSB, 5VSB
Supported OS	
OS	<p>Microsoft® Windows: Windows® 10 (64 bit)</p> <p>Linux: RedHat Enterprise Linux Server 7.7 (64 bit) / 8.1 (64 bit) CentOs 7.7 (64 bit) / 8.1 (64 bit) SUSE Enterprise Linux Server 12 SP5 (64 bit) / 15 SP1 (64 bit) Ubuntu 19.04 (64 bit) / 20.04 (64 bit)</p> <p>Hypervisor: VMWare® ESXi 7.0.0/ vSphere 7.0.0</p> <p>* Z490D4U-2L2T support Legacy and UEFI BOOT. * The Intel® RAID mode is not supported on the Linux system.</p>
Environment	
Temperature	Operation temperature: 10°C ~ 35°C / Non operation temperature: -40°C ~ 70°C
Humidity	Non operation humidity: 20% ~ 90% (Non condensing)