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P3496R 3U Rugged Server

- Extremely Rugged 3U Server
- Front MIL Spec I/O Connections
- IP54 Water Ingress Resistant
- AC or DC Powered Options
- Shock and Vibration Tolerant
- Range of Processor Options
- Wide Operating Temperature Range
- MIL Spec EMC and EMI Performance

Westek's P3496R Rugged 3U Server is designed for use in high and low temperature environments that are subject to shock, vibration, dust and sand with this particular model providing resistance to water ingress at up to IP54 rating. Westek's range of Rugged Servers are ideal for use in hostile environments including military COTS use and are available with a choice of auto ranging AC or DC power supply.

The server has been tested and qualified to MIL-STD-810G, and is designed to meet DEF STAN 00-35, MIL-STD 461 and DEF STAN 59-411 for use in aircraft, mobile or fixed land based systems, transportation and naval environments below decks as well as general use where a ruggedized system is required. Optional conformal coating of internal electronics is carried out for operation in humid environments.

The P3496R provides front I/O access for all signals including power input so is ideal for locations where access to the rear is restricted or unavailable. Westek's innovative forced air cooling with IP54 compliance means that the P3496R can support a wide range of high power processor options including the latest Intel® server class embedded multi-core processors. There are also options for RAID protected hot swap disks (SSD or magnetic media).
A typical specification provides :

- One or Two High Performance Multi-Core Processors (up to 24 cores total)
- Intel® Embedded Long Life Core i5 or i7, or Multi-Core Xeon Processors
- Dual or Quad Gbit / 10Gbit Ethernet Interfaces (options for copper or fibre)
- Front Access Rugged MIL I/O Connectors
- Up to 4 Shock Mounted Removable Solid State Disks Drives
- IP65 Front Switches, Indicators and Connectors
- Auto Ranging AC Power Supply (DC options also available)
- Automatic Temperature Dependant Electronic Fan Speed Control

The server uses specialised wide operating temperature solid state disk drives with a high operating shock and vibration tolerance with the added protection of a hot swappable RAID mirror in typical configurations.

Compliance Certification

Formal compliance testing, certification and report services for specific builds are available to the typical standards listed below or as required. The standard build of the P3496R has been tested and qualified to, or is designed to meet, the following typical requirements. Specific configurations may be formally tested, and certified as an optional service.

MIL-STD-810G Environmental Test Criteria

Operating Tests :

Low Temperature	Method 502.5 Procedure 2	-20℃
High Temperature	Method 501.5 Procedure 2	+55℃
Humidity	Method 507.4	5 x 48 hour cycles
Vibration	Method 514.6 Category 4	10Hz to 500Hz 1.04Grms
Shock	Method 516.6	20G 11mSec TPS 3 axis

Non Operating Tests

Shock	Method 516.6	40G 11ms TPS 3 axis
Low Temperature Storage	Method 502.5 Procedure 1	-45℃ for 72 hours
High Temperature Storage	Method 501.5 Procedure 1	+70℃
Vibration	Method 514.6 Category 4 fig 514.6C-VI	5Hz to 500Hz @ 2.24Grms

MIL-STD-461E EMC and EMI Test Criteria

CE102	Conducted Emissions	10KHz - 10MHz
CS101	Conducted Susceptibility Power Leads	30Hz - 150KHz
CS114	Conducted Susceptibility Bulk Cable Injection	10KHZ - 200MHz
RE102	Radiated Emissions Electric Field	10KHz - 18GHz
RS103	Radiated Susceptibility Electric Field	2MHZ - 18GHz

Additional test, certification and report services also available including DEF-STAN 59-411 and DEF-STAN 00-35.

Westek offers a full range of military specification test and verification services to other standards for environmental, EMC and EMI.

Please contact Westek for your specific requirements.

westek TECHNOLOGY

Server Engine

- Intel® chipset server engine
- I5, i7 or single / dual multi-core dual Xeon®
- Intel® embedded long life multi-core processors
- Up to 256GB memory (depends on chipset)
- SATA or optional SAS disk Interfaces
- Optional RAID 0, 1, 10 and 5 support
- Dual 10/100/1000 Ethernet ports (Expandable)
- Up to 8 x USB 2.0 ports
- Integrated graphics
- Options for up to 6 Secure Low Profile PCI-Express / PCI Expansion Slots Inside.

Storage

Options for one, two or four removable 2.5” form factor wide operating temperature SSDs with RAID support.

Expansion and I/O

Optional internal low profile PCI, or PCI Express expansion slots. The unit has a custom front panel allowing a range of rugged MIL specification connectors to be provisioned depending on what I/O signals are required by the application and to interface to any internal expansion cards that are to be fitted including fibre optics. Expansion cards must be provisioned and fitted at manufacturing time as this is a sealed unit.

Environment

Actual specification depends on configuration. The following is for a dual processor Xeon® system with SSDs.

Operating

Temperature: -20℃ to +55℃
Humidity: 10 to 95% Non-Condensing
Vibration: up to ~2G 10Hz to 500Hz
Shock: 20G / 11mSec
Altitude: -300 to +5000 metres

Non-Operating

Storage: -45℃ to +70℃
Vibration : up to ~3.2G 10Hz to 500Hz
Shock : 40G / 11mSec
Altitude: -300 to +12000 metres

Physical

Dimensions: 3U 19” Rack mountable 431(W) x 132(H) x 550(D) mm (+ front connectors and handles)

Weight (Net): Approximately 18Kg (depending on material and component build options and connectors)

CE Compliance: EEC EMC & Safety. Designed to meet UL and FCC requirements

RoHS Compliant

96-265V 50Hz or 400Hz AC or 18-36VDC Power Options Available, ~200Watts Power Consumption.

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