RTBX05

20" Deep, 4 Drive, Rear I/O, Rugged Trusted BuiltSECURE Servers

Maintain data integrity and safeguard IP at the edge

- Root of Trust (RoT) enforced boot and configuration management
- Cryptography, secure boot and advanced physical protections
- Cyber-resilient BIOS, secure virtualization and data-at-rest protection options
- Latest data center caliber CPUs

When configured as a boot server, RTBX05 BuiltSECURE servers ensure only authorized personnel can modify the cluster.

Protect intellectual property and confidential data at the edge

Mercury's RTBX05 rugged trusted BuiltSECURE™ servers are designed specifically to guard against local and remote attacks. Maintaining system-wide integrity, they protect sensitive data and technology from loss or compromise.

Deployed on over four generations of Intel® microarchitectures, Mercury's RTBX05 BuiltSECURE servers can be configured with a variety of nation-state level security features that mitigate reverse engineering and deliver cyber resiliency. A hardware-based Root of Trust and cyber-resilient BIOS mitigate multiple security threats to your application by reducing attack surfaces and minimizing boot devices. Built-in interfaces allow the servers to participate in platform-wide security architectures.

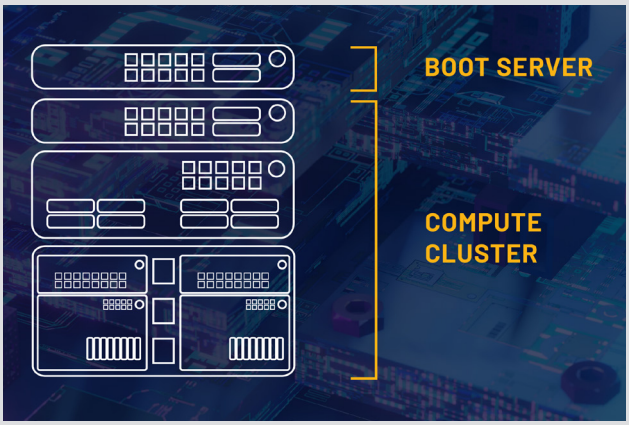
Mercury's experienced system security engineers and customer support teams deliver affordable, end-to-end product security services including vulnerability assessments, technical training, classified capabilities and product-specific protection schemes.

Highlights

- Mitigate reverse engineering, bolster cybersecurity and safeguard critical IP with Mercury's proven BuiltSECURE™ technology
- Reduce cost and preserve security development with extendable architecture proven across multiple processor generations
- Safeguard against present and emerging threats with secure processing and end-to-end system security engineering (SSE) services
- Minimize risk of back doors, counterfeits and trojans with secure manufacturing and supply chain integrity

Secure Your Server Cluster

When configured as a boot server, RTBX05 BuiltSECURE servers ensure only authorized personnel can modify the cluster. Built-in cryptography and physical security delivers assurance and maintains data integrity even when the stack is offline or remotely accessed, making it ideal for edge applications.



Built-in board volatility features ensure no classified data is unintentionally stored on the hardware, avoiding the need to station physical security guards.

Our extensible BuiltSECURE security architectures evolve to mitigate current and future threats. Architectures work across processor generations, preserving security development and reducing overall cost and program risk.

Optional FIPS 140-2, NIAP-certified, rugged secure solid state drives with key purge, fast erase, sanitization and self-destruct protocols protect data at rest for NSA's CSfC program, even if the system is compromised. An optional secure hypervisor efficiently manages resources and minimizes attack surfaces so systems can efficiently respond and recover from compromise.

Supply Chain Integrity for Trusted Performance

Board support packages, BIOS, and network stacks are maintained by U.S. personnel and are available for inspection by government agencies. MIL-PRF-38534 Class H/K, MIL-PRF-38535 Class Q, ISO 9001:2015 and AS9100 facilities maintain quality and inspection compliance. Motherboards are manufactured and tested in DMEA-accredited facilities; minimizing the risk of back doors, counterfeits, and trojans.

Utilizing a trusted supply chain for both hardware and software ensures commercial IP is protected. This also helps system integrators meet Defense industry trust objectives including DoDI 5200.44 "Protection of Mission Critical Functions to Achieve Trusted Systems and Networks."

Field-Proven, Rugged Design

To enhance reliability and eliminate disconnect during shock events, RTBX05 BuiltSECURE servers remove socketed components and solder processors and memory directly to the motherboard. Advanced thermal and mechanical design features provide superior resilience to vibration, shock, dust, sand, and temperature extremes.

With over 40 years of technical expertise, Mercury Systems works closely with customers to design trusted computing solutions that are easy to integrate, affordable, and reliable.

TECHNICAL SPECIFICATIONS

BuiltSECURE Technology Options

Access control and key management

Non-volatile memory write protection

Data-at-rest protection

Sanitization

Secure firmware management

Physical protection mechanisms

Sensors

Cryptographic offload engine

SSE Services and Support

12-month warranty for service/repairs and continuous support included

Cybersecurity partner pre-integration

Program Protection Planning Assistance

Red team/Blue team vulnerability analysis

Processing*

Dual Intel® E5-2600 processors
- E5-2618L v4 (10 core, 2.2 GHz, 75 W)
- E5-2648L v4 (14 core, 1.8 GHz, 75 W)

2x QPI up to 8 GT/s

Up to 128 GB DDR4 up to 2400 MHz memory

Intel® Trusted Execution Technology (TXT) with integrated TPM 2.0

Management and Operating System

BIOS: Mercury-specialized and supported

Cyber-resilent baseboard management controller

Red Hat® Enterprise Linux® v7 support

Secure hypervisor and Linux options

Expansion and Maintainability*

1U: Up to 2x PCIe 3.0 x16 cards, half-height half-length

2U: 5x PCIe 3.0 cards
- Full-height/ full-length
  - A1 – x16/x8
  - A2 – x8 electrical (x16 mechanical)
  - A4 – x16
  - A5 – x8 electrical (x16 mechanical)
- Half-height/ half-length
  - A3 - x0/x8 (x16 mechanical)

Front-panel removable drive sleds (4x 7 mm or 2x 15 mm available)

1U: 3x fixed fans

2U: 5x fixed fans

Input/Output Versatility*

Multi-format optical drive CD/DVD/Blu-ray R/W

4x USB 3.0 ports

2x USB 2.0 ports

2x 10/100/1000 Ethernet ports

1x 10/100 Ethernet port

GPIO test port

Power Supply Options

1U: Single 550 W AC power supply 90-264 VAC (47/63 Hz, 8-4 Amps)

2U: Redundant 750 W AC power supply 90-264 VAC (47/63 Hz, 8-4 Amps)

Environmental - Operating*

Temperature**: 0°C to 50°C per MIL-STD-810H, Methods 501.5 and 502.5 Procedure II

Altitude: 0 ft - 12,500 ft per MIL-STD-810H, Method 500.5, Procedure II

Humidity: 5% to 95% (non-condensing), MIL-STD-810H, Method 507.6, Modified

Shock: 3 axis, 20 g, 11 ms 1/2 sine pulse per MIL-STD-810H, Method 516.8, Procedure I

Vibration: Per MIL-STD-167-1A, Type 1

EMI/EMC: CE10 2& RE102, MIL-STD-461G

ABN: <85 dB A under max operating conditions, MIL-STD-1474D

Environmental - Non-Operating*

Temperature: -40°C to 70°C, MIL-STD-810H, Methods 501.5 & 502.5, Procedure I

Humidity: 5% to 95% (non-condensing), MIL-STD-810H, Method 507.6, Modified

Altitude: 0 ft - 30,000 ft per MIL-STD-810H, Method 500.6, Procedure I

Random Vibration: 4.67 Grms vertical, 4.5 Grms longitudinal/lateral 5 Hz to 2000 Hz per MIL-STD-810H, Method 514.8, Procedure I Composite profile of category 4 (Composite Wheeled Vehicle) and Category 7 (C-17)

Additional Options

Shock pins

Front door filter

Slide rails and brackets/ shelf system

Cable accessories

Tamper-evidence features

Mechanical*

Height:
- 1U: 1.75" (44.45 mm)
- 2U: 3.5" (88.9 mm)

Width: 17" (433.3 mm)

Depth: 20" (508 mm)

Weight (typical)*:
- 1U: 26.3 lb (11.9 kg)
- 2U: 33.7 lb (15.3 kg)

19" rackmountable

Configurations

RTBX05 1U

RTBX05 2U

* All products designed to meet or exceed listed data sheet specifications. Some specifications including I/O, weight and thermal profiles are configuration dependent. Contact Mercury for specific configuration requirements.

** To reach temperatures above 40°C, additional measures such as throttling or enhanced airflow may be necessary.

FRONT VIEWS

REAR VIEWS

Partnering with

intel partner Titanium IoT Solutions

Corporate Headquarters
50 Minuteman Road
Andover, MA 01810 USA
+1 978.967.1401 tel
+1 866.627.6951 tel
+1 978.256.3599 fax

International Headquarters
Mercury International
Avenue Eugène-Lance, 38
PO Box 584
CH-1212 Grand-Lancy 1
Geneva, Switzerland
+41 22 884 51 00 tel

Learn more
Visit: mrcy.com/contact-us