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## CYCLONE S1U401-MD

1U Rugged Rack Mount Server with Two Fully Isolated Domains, each with Intel® Xeon® E5, 10 Gigabit Ethernet and Removable Drives

Fully-isolated  
**Multi-Domain**  
1U Short Rack Server

Each with: Intel®  
**Xeon® E5**  
Up to 18 cores

Optional Layer 2 /3  
**14 Port**  
Managed Switch

Operating Temperature Range  
**-20° to +75°C**  
Available in Rugged Level 3

### SYSTEM HIGHLIGHTS

- Isolated, multi-domain server in 1U rack-mount form factor
- Fully supports Multi-Domain, Red/Black NSA-secure architecture
- Fully isolated MIL-STD-1275 or 110/220VAC power for each domain

#### Two fully-independent systems (Red/Black) each with:

- Intel® Xeon® E5 processor w/ up to 18 Cores and 36 virtual machines
- Up to 256 GB of DDR4 memory with ECC
- 1 GbE plus 2x 10 GbE
- Optional 17 Ethernet ports: 13x 1 GbE, 2x 10GbE, 2x 40GbE

#### Two fully-independent systems (Red/Black) each with:

- Optional fixed M.2 or mSATA for OS boot (optional encrypt/secure erase/write-protect)
- Four removable 2.5" SATA/NVMe (PCIe) SSDs (optional encrypt/secure erase/write-protect)
- Security via SD key storage and option BMC management
- Intel® Virtualization Technology (VT-x/VT-d2) and Trusted Execution Technology (TXT)

### SYSTEM OVERVIEW

The S1U401-MD "Cyclone" is an ultra-rugged, 1U rack mount, lightweight multi-domain server system with two domains, each with up to 16 CPU cores, dual 10 Gigabit Ethernet ports, removable drives and exceptional I/O flexibility. It is designed to provide two fully-independent and isolated high-performance Intel® Xeon® E5 v4 servers, as well as four removable SAS/SATA/NVMe drives—all in a 1U high box. It provides the highest level of workstation performance possible in a fully ruggedized, convection-cooled system, operating from -20° C to +75° C. Even the AC or DC power supplies are separate to assure full isolation. This system architecture simplifies deployable MIL-SPEC technology for Multiple Independent Levels of Security (MILS), NSA Red/Black network separation, or system redundancy, while integrating processing, storage and high speed I/O in a small, ultra-rugged 1U high rack-mount enclosure with the greatest possible performance per dollar and per watt.

### APPLICATIONS

The 1U rack-mount S1U401-MD multi-domain Cyclone is two complete (up to) 18 core Xeon® server sub-systems packaged together but electrically isolated, including their separate power supplies. Cyclone is intended for military/defense/aerospace Red/Black networks—such as found on platforms with SIPR/NIPR networks. With the onboard 1 and 10 Gigabit Ethernet ports, Cyclone is an ideal forwardly-deployed vehicle-mounted battlefield dual-server that offers double performance or redundancy due to the dual domains. Alternatively, the S1U401-MD is an ideal airborne network multi-domain server that can also drive operator consoles, such as in an ELINT platform, while recording data and distributing it to multiple Ethernet LANs. Optional Ethernet ports provide LAN connectivity, CPU-based bridging, and multi-node connectivity. Removable drives with optional encryption provide NAS and software-defined storage that scales with system requirements. The dual 40 GbE ports provide fast sensor and storage data transfer, and can be configured as 4x 10 GbE ports.



