Roller CORE

Multi-Function Network Controller

Resilient, secure data sharing over SATCOM, Cellular, & Wired Ethernet

Roller CORE
Patent No. 10,177,914

Roller CORE® is a rugged portable network solution providing secure networking in a minimized size, weight and power (SWaP) form factor designed for discreet travel.

Roller CORE was designed and engineered with mobility and flexibility in mind. Its sleek, nondescript, and Federal Aviation Administration (FAA) carry-on compliant exterior belies the powerful ciphertext-compatible network equipment inside.

Roller CORE features two computers, supporting classified and unclassified enclaves, within one unit. The minimized SWaP Roller CORE is powerful and flexible enough to maintain the high-speed computing and bandwidth required for sharing video, imagery, voice, large track volumes, and other high-demand data. Two removable, single-board computers (SBCs) offer swift reconfiguration to new mission needs without the cost and time to procure new hardware.

Unlike typical hardware-based networking systems, our open architecture, software-based CORE solution supports rapid configurations and technology upgrades, speeding time to capability. With its multiple interface options, the CORE architecture addresses a platform's networking and cybersecurity needs—and can host additional applications quickly and affordably.

Roller CORE flexibly, powerfully, and securely extends operational communications and networking capability for enhanced mission execution and is made in the USA.

Roller CORE delivers unmatched benefits to anyone on the go

SWaP
> Minimized footprint to support commercial airline carry-on requirements
> Replaces bulky and obsolete routers

Flexible
> Virtualized environments with separation of key components to enable flexible adaptation to changing needs without costly modifications to hardware or footprint
> Vendor agnostic network infrastructure components
> Configurable network paradigm, for future CONOPS

Powerful
> CORE units can interconnect to form a powerful system of multiple enclaves

Accessible
> T3 network management software delivers cross-node visibility into enterprise-wide system configuration and metrics, for local and remote monitoring or modification

Secure
> Multiple encryption layers, including robust data at rest encryption (DAR)
> Powerful NSA-certified HAIPE encryption inside CORE keeps your computing environment secure (Type I to commercial)
> Zero Trust Architecture compliance. Modern firewall supports deep packet inspection up to layer 7 of the OSI stack
> National Cyber Range tested
> Made in the USA

Proven
> Built upon proven system components providing advanced communications and network optimization, cybersecurity, data encryption, and intuitive network management services
> Patented technology. Two independent security domains within a single chassis with embedded HAIPE Mature. Deployed on multiple platforms

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Roller CORE Specifications

Physical

Size (L x W x H)	21.96 x 13.97 x 8.98 in
Weight	35 lbs

Power

- 88-W max power with General Dynamics KG-175n

Environmental

- **Temperature:** -40°C to 55°C (operational), -40°C to 71°C (storage)
- **Humidity:** 95% at 60°C
- **Altitude:** 50,000 ft (operational)
- **Explosive Atmosphere:** Per MIL-STD-810 Method 511.5
- **Vibration:** Per MIL-STD-810 Method 514.6
- **Shock:** Per MIL-STD-810 Method 516.6: 20 G (operational)
- **Acceleration:** Per MIL-STD-810 Method 513.6: 5.5 G (operational)
- **Sand/Dust:** Per MIL-STD-810 Method 510.5 Blowing Sand
- **Salt Fog:** Per MIL-STD-810 Method 509.5

Configuration Options

- 4G LTE connectivity using in country SIM card
- Starlink Connectivity
- Supports multi domain (ciphertext), NSA secure architecture
- Two fully independent security domains: PT (1 SBC) and CT (1 SBC)
- Intel Core i7 processor (7th or 8th generation)
- Up to 32 GB DDR4 memory
- Up to 1 TB NVMe SSD (SED)
- vPro Virtualization Support
- Trusted Platform Module v2.0

Rear Panel I/O

- 3 - 1-GB PT Ethernet ports
- 5 - 1-GB CT Ethernet ports

Side Panel I/O

- One 90-240 VAC IEC Input
- One 90-249 VAC NEMA 5-15R Output (Starlink Power Receptacle)

SDN Components

OS: Red Hat Enterprise Linux running kernel based virtual machines, PODMAN containers, and/or Docker containers
Processor: Intel Core i7 (7th or 8th generation)
RAM: Up to 32 GB DDR4
SDD: 1 TB NVMe SSD
Routing: Border Gateway Protocol (BGP), Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), policy-based routing, IPv6, Virtual Route Forwarding–Lite (VRF-Lite), multicast, LISP, and Generic Routing Encapsulation (GRE)
Addressing: Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Network Address Translation (NAT), 802.1Q VLAN, Ethernet Virtual Connection (EVC), and VXLAN
VPN: IPsec VPN, Dynamic Multipoint VPN (DMVPN), Easy VPN, SSL VPN, and FlexVPN
MPLS: MPLS VPN, virtual routing/forwarding (VRF), and Bidirectional Forwarding Detection (BFD)
Security: Cisco IOS Zone-Based Policy Firewall, access control list (ACL), RADIUS, TACACS+, and authentication, authorization, and accounting (AAA)

Compliance

- TEMPEST-compliant NSTISSAM 1/92 Level I
- MIL-STD-810, MIL-STD-461, MIL-STD-46C, MIL-STD-704

Other SDN Components

- Support for boundary defense protection system and deep packet inspection (e.g., Cisco ASA or Palo Alto)
- WAN optimization and acceleration (e.g., Riverbed VCX)
- Native Linux bridging for VLAN tagging, isolation, trunking, and separation of system management plane from data plane

Optional Capabilities for Roller CORE

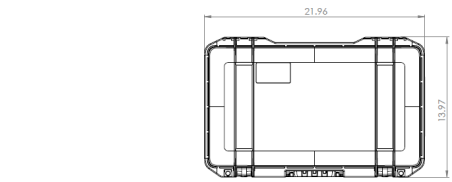
Embedded Firewall

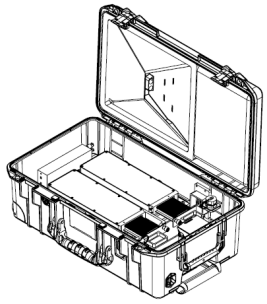
Optional embedded virtual firewall provides extra security for communications.

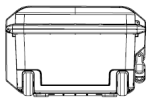
Expansion interfaces

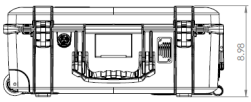
Roller CORE PT enclave has an XMC expansion slot and a mPCIe expansion slot to support additional capabilities including:

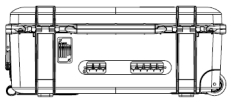
- AI/ML Processor (Wolf GPU)
- Software Defined Radio
- FPGA expansion











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