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Curtiss-Wright Introduces Embedded Industry's Smallest, Lightest Rugged Secure Cisco® IP Router

Parvus® DuraMAR® 6300 is smallest, most rugged Cisco GbE router designed for use in deployed embedded military and aerospace applications

ASHBURN, Va. – May 7, 2020 – Curtiss-Wright's Defense Solutions division, a proven leading supplier of ultra small form factor (USFF) mission computing and networking solutions, has announced the newest addition to its family of Cisco® technology-based rugged IP router systems. The Parvus DuraMAR 6300 secure mobile network router is the smallest, most rugged Cisco router system available for use in embedded military and aerospace applications. Designed to ensure secure inter-platform communications in today's networked battlefield, the DuraMAR 6300 enables Gigabit speed networking for high-speed datalinks and radios.

The robust commercial off the shelf (COTS) DuraMAR 6300 integrates a Cisco ESR-6300 embedded services router (ESR) card running Cisco IOS-XE software. The fully integrated solution supports 6 Gigabit Ethernet (GbE) ports and is ready for deploying secure network backbones onboard fast jets, helicopters, UAVs, ground vehicles and other extreme environments. Pre-qualified to the widest range of MIL-STD environmental tests, this proven COTS solution reduces program risks and lead time for delivery, while ensuring cost-competitive pricing.

With advanced cybersecurity targeting requirements of international Common Criteria certification and National Security Agency (NSA)'s Commercial Solutions for Classified (CSfC) programs, this compact line replaceable unit (LRU) eases the deployment, training, and management of fast, secure networks. Packaged in a MIL-grade chassis optimized for size, weight, and power (SWaP),

the DuraMAR 6300's built-in compute resources can be deployed at the edge of the network to reduce response time to incoming Internet of Things (IoT) sensor data.

"As a Cisco Systems Solution Technology Integrator, we are excited to bring Cisco's highest performance embedded router technology to the aerospace and defense market in the highly rugged, miniature Parvus DuraMAR 6300 system," said Lynn Bamford, President, Defense and Power. "With its small size, Gigabit speed and edge compute capabilities, our new secure router advances the DuraMAR product family so defense and aerospace customers can get reliable high-speed access to critical data in the lowest SWaP package available."

The DuraMAR 6300, Curtiss-Wright's new eighth generation DuraMAR router, delivers Gigabit network speeds to SWaP-constrained embedded platforms with up to 10x the routing/switching throughput and up to 20x faster encrypted bandwidth compared to the previous generation DuraMAR 5915 router.

Housed in a miniature IP67-rated (dust and waterproof) fanless enclosure with MIL-performance circular connectors and aerospace-grade power supply, the DuraMAR 6300 supports the latest in Cisco networking and security technologies, including CNSA Next-Gen Encryption algorithms, VPN, firewall, secure boot, remote VoIP telephony, and mobile ad hoc networks (MANET). This USFF line replaceable unit (LRU) requires less than 20 watts of power (est.), weighs less than 2 lb., and measures ~55 in³ in volume, making it 50% smaller and lighter than its predecessor. At the same time, the DuraMAR 6300 also packs in new capabilities for Cisco IOx-based edge/fog computing services for Cisco IOS + Linux-based application deployment using on-board computing resources to analyze, secure, and share data from embedded IoT sensors at the edge of network.

Protecting Critical Data-in-Motion
The DuraMAR 6300 supports critical infrastructure and DoD networks with advanced enterprise management features and cybersecurity capabilities, thanks to its ubiquitous Cisco IOS-XE software environment, which due to its familiarity by IT staff minimize training and support costs. The unit's integrated ESR-6300 router card boasts a FIPS 140-2 validated cryptographic module and will undergo appropriate certifications for government use, including Common Criteria and the NSA Information Assurance Directorate (IAD)'s CSfC program.

Rugged by Design

The DuraMAR 6300 is designed to perform optimally in the harshest conditions. For example, the router's chassis uses rugged MIL-STD circular connectors to mitigate against failure from vibration and water ingress associated with less robust RJ-45 connectors. Validating its reliability and mechanical robustness under extreme environmental conditions, the DuraMAR 6300 will undergo the most extensive MIL-STD and DO-160 environmental and EMC qualification test program for a COTS product based on Cisco technology. Testing spans full water immersion, wide temperature operation over -40 to +71C (-40 to +160F) without fans, 40Gs operational shock, 75Gs crash hazard shock, random vibration for fighter jets, attack helicopters and armored tanks, operation at altitudes of 50,000 ft (15,240 meters), and many other demanding environmental, EMC, and power compliance tests. Test report documentation is available upon request to qualified customers.

To mitigate the potentially harmful "dirty power" common to military ground vehicles and aircraft, the DuraMAR 6300 also features a MIL-STD-1275/704/DO-160 compliant power supply compatible with civil and military aircraft and ground-vehicle voltage transient and EMI levels.

DuraMAR 6300 Features

- Integrated Cisco ESR-6300 embedded router card
    - 6 GbE ports: 2 WAN (routed), 4 LAN (switched)
    - Supports concurrent data, video, and voice services, firewalling, hardware accelerated Next-Gen Encryption
- Cisco IOS-XE Network Essentials or Network Advantage software with throughput license options (50Mbps/250Mbps/>250Mbps) and CME licenses for IP phones
- Optional fog/edge computing resources:
    - S/W: Cisco IOx software development environment and SDK
    - H/W: ARM A72 CPU, 4GB RAM, 100GB mSATA Flash SSD, USB interface, Ethernet interfaces, RS232 async serial port
- SWaP optimized:
    - Small size: ~55 in³ in volume
    - Lightweight: ~ 2 lb (0.91 kg)
    - Low-power: < 25 watts (approx.)
- Rugged IP67 chassis with circular MIL performance connectors
- Wide input MIL-1275/704/DO-160 power supply for aircraft and ground vehicles
    - Optional 50ms power hold-up per MIL-STD-704 (for aircraft power switch-over)

- Extreme MIL-STD-810G/DO-160 thermal, shock, vibration, altitude, humidity
- MIL-STD-461F/DO-160G EMI/EMC radiated and conduction emissions & susceptibility

Edge Computing Services

The DuraMAR 6300 has optional provisions for hosting applications in containers within the Cisco IOx application environment to combine IoT application execution within the fog, secure connectivity with Cisco IOS software, and powerful services for rapid, reliable integration with IoT sensors and the cloud. The ESR-6300 module's processing, storage and sensor interfaces (over serial/USB/Ethernet) can be leveraged for IOx applications. By bringing application execution capability to the source of IoT data, customers overcome challenges with high volumes of data and the need for automated, near–real time system responsiveness. Cisco IOx allows application developers to work in the familiar Linux application environment with choice of languages and programming models with familiar open-source development tools.

Complementary Networking and Processing Solutions

For applications that require expanded port density with additional switch ports, Power over Ethernet (PoE) capabilities, fiber optic trunks, or Intel-based mission processing capabilities, Curtiss-Wright also offers Cisco IOS-based switches (including the [Cisco ESS-3300-based DuraNET 3300](#)) and Intel®-based mission computers (including the [Intel Xeon® E3-based DuraCOR® 8043](#)) to complement the DuraMAR 6300 router in IP networking technology refresh and situational awareness upgrade applications deployed at the tactical network edge.

For more information about Curtiss-Wright's Defense Solutions division, please visit www.curtisswrightds.com.

About Curtiss-Wright Corporation

Curtiss-Wright Corporation is a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing reliable solutions through trusted customer relationships. The company is headquartered in Davidson, N.C. and employs approximately 9,100 people worldwide. For more information, visit www.curtisswright.com.

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