The Future of Hardware-Enforced Data Diode Technology is Here

Hardening Networks with Hardware-Enforcement

U.S. Government regulators and Critical Infrastructure operators recognize that inherently vulnerable software must be augmented with less vulnerable hardware-enforced technology. This includes the latest RTB guidelines, which will require nearly all cross domain connections to classified networks to include a hardware-enforced domain separation by 2023.

The Owl Solution

XD Verge provides hardware-enforced network segmentation with an optical or digital isolator and up to 1 Gbps one-way data flow in a low-SWaP-C form-factor. The foundation of XD Verge is the XDE Radium embedded module, a unique, ultra-low latency protocol filtering data diode (PFD) built on revolutionary FPGA-based technology. XD Verge supports IPV4 UDP (Unicast) or ARP messages with line-rate packet filtering up to 150x faster processing than CPU-based solutions. Because it does not feature internal CPUs, it is also invulnerable to CPU-based attacks.

XD VERGE PERFORMS THREE PRIMARY CYBERSECURITY FUNCTIONS:

• Hardware-enforced one-way data flow enforcement to eliminate return channel communication and pinging or probing of the source network

• Packet header validation and whitelisting to verify trusted sources and protocols

• Packet header deconstruction and reconstruction to stop the transfer of malicious (header) code

XD Verge is ideal for government and critical infrastructure implementations where its combination of hardware-based flow enforcement and packet filtering is required for MITRE'S D3FEND Network Isolation tactic through Broadcast Domain Isolation and Outbound Filtering techniques.
**Packet Filtering and One-Way Data Transfer**

- Guaranteed one-way transfer enforced by FPGA and hardware isolators
- Protocol break – no routable information is passed between source and destination networks and packet contents are rebuilt in the receive FPGA
- Packet by packet white list content filtering
- Packets with non-compliant content are dropped by the source-side FPGA before being passed across the hardware isolator

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**XD Verge Technical Specifications**

**Dimensions**
- 7.25" × 4.75" × 1.65"
  (184.15mm × 120.65mm × 41.91mm)

**Weight**
- 3 Lbs.

**Power Usage**
- 6W Max

**Power Supply**
- 5V × 2 via onboard headers

**Cooling**
- Ambient Air

**Ports (Per Side)**
- 1× 1GbE RJ-45
- 1× Serial

**Throughput (Nominal)**
- 1 Gbps

**Protocols Supported**
- UDP Unicast, ARP (Source Side)

**Operational Temperature**
- -40° to 70° C

**Storage Temperature**
- -40° to 70° C

**Certifications**
- Common Criteria EAL 4+
- U.S. Government Data Diode Evaluation

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Owl Cyber Defense Solutions, LLC leads the world in data diode and cross domain network cybersecurity. With a constant focus on customers in the military, government, critical infrastructure, and commercial communities, Owl develops market-first, one-way data transfer products to meet a variety of operational needs, from entry level to enterprise.

For more information on Owl, or to schedule a demo, visit www.owlcyberdefense.com

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