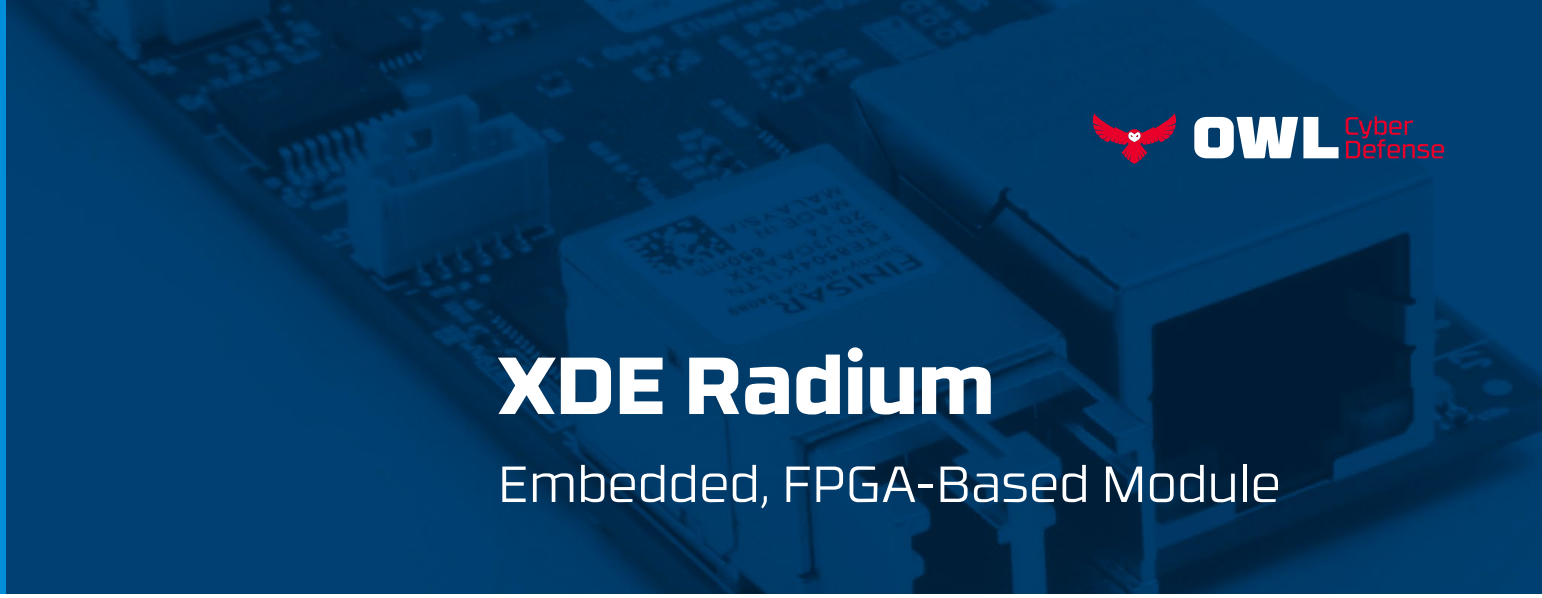
DATA SHEET



XDE Radium

Embedded, FPGA-Based Module

AT-A-GLANCE

- Low SWaP-c (size, weight, power, and cost), 1 Gbps, cybersecurity module
- Developed with FPGA (Field Programmable Gate Array) filtering technology
- Available as an embedded module for new or existing product designs
- Performs high assurance, one-way data transfers
- Satisfies NERC-CIP requirements for one-way data transfers in power generation applications
- Supports Department of Homeland Security (DHS) and National Institute of Standards and Technology (NIST) Special Publication 800-82 guidelines for protecting critical assets
- Security assurance does not depend on frequent software patches and updates

Defending Operational Technology

Industrial network owners are seeking alternatives to complex, maintenance-intensive industrial firewalls. Industrial device manufacturers that embed more secure, less expensive cybersecurity solutions into industrial network devices, position themselves to increase market value by meeting industrial network owners' expectations for enhanced security. Embedding cybersecurity into industrial devices helps industrial network owners confidently eliminate, or curtail, stand-alone industrial firewall devices, with a more secure and unified approach. This migration away from stand-alone to embedded cybersecurity, creates a compelling business case, by delivering a larger percentage of the overall network spend to industrial device manufacturers. Because of this, Owl is decomposing our technology and making it available as individual modules for industrial device manufacturers.

Owl is breaking new ground by providing a low SWaP-c (size, weight, power, and cost) cybersecurity module that can be designed into industrial control systems to provide hardware-enforced data evaluation and control, without exposing industrial devices to new threat vectors. This module reduces operators' needs for additional cybersecurity solutions and the overhead associated with maintaining it, thereby reducing both their capex and opex costs.

XDE Radium

This technology is a single-board, cybesecurity module that can be incorporated into the design of industrial devices, where safety and assurance is critical. This hardware module provides high-assurance, hardware-enforced, one-way data transfers from trusted to untrusted networks, without requiring new software or computation resources. With a standard ethernet interface and a high-throughput maximum of 1 Gbps, XDE Radium performs one-way, UDP (Unicast & Multicast) and TCP/IP (in development) data transfers, preventing external access to industrial devices.

Embedded Modules

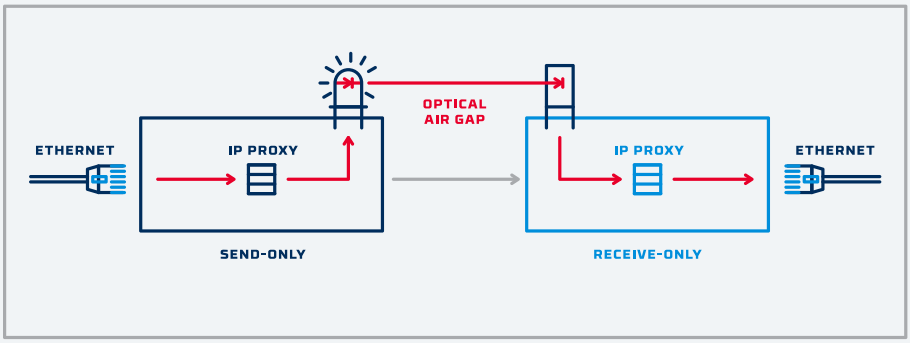
For operators, designers, and manufacturers of advanced, connected, industrial and critical infrastructure controllers and safety systems, this module can be built-into modular platforms, such as a controllers, SCADA devices, safety systems, and network switches. This module provides a deterministic, one-way data transfer that provides very secure data flow management between equipment and external networks.

XDE Radium

1 Gbps, One-Way Transfer Module

One-Way Data Transfer

- Guaranteed, one-way transfer
- Protocol break – no routable information is passed between source and destination networks
- Secure UDP transfer
- Scalable module



Key Features

- High throughput maximum of 1 Gbps
- One-way UDP (Unicast & Multicast) and TCP/IP (in development) support
- Optical isolation, with a single fiber optic cable, or digital isolation
- Protocol break – no routable information is passed between source and destination networks
- Extended operating temperature range (-40°C to +70 °C)
- Low power consumption – no new software or computation resources needed
- Standard CAT 5/6 ethernet interface (in/out)

Technical Specifications

POWER SUPPLY
Separate power sources on the source and destination sides of the module for security

NETWORK CONNECTIVITY
Single CAT 5/6 input and single CAT 5/6 output

BOARD DIMENSIONS
101.6mm × 38.1mm

SUPPORTED PROTOCOLS
UDP (Unicast, Multicast) & TCP/IP (in development)

OPERATING CONDITIONS
-40°C to +70°C

DEVICE LIFESPAN
14 years

THROUGHPUT
Maximum of 1 Gbps