SureSentry™ Data Diode

Hardware Enforced Security

FIPS 140-3™

Features

- **One-way-only data flow**
- **Gigabit Ethernet port to secure (Secure) network**
- **Dual Gigabit Ethernet ports to public (Unsecure) network**
- **1U rack mountable or table-top design**
- **FIPS 140-3 Certified**

The Sunhillo SureSentry™ Data Diode is designed to protect the integrity of a secure network by strictly enforcing a one-way-only flow of data from a secure network to an unsecure public network. SureSentry accomplishes this by implementing a 100% hardware-enforced security protocol that cannot be disabled or bypassed.

Securely connecting multiple networks with different security classifications is a critical cyber security issue for the Air Traffic Control, Defense and Industrial Sectors. SureSentry addresses that issue.

Features:

Gigabit Ethernet port to secure (Secure) network. The SureSentry Data Diode receives IP data from the secure network for forwarding to the public network. The secure network communicates with a fully compliant IP proxy that in turn forwards one-way UDP packets to the public side of the Data Diode. With no logical or electrical receive path on the Secure side UDP interface, malicious packets can't make their way to the secure network.

Dual Gigabit Ethernet ports to public (Unsecure) network. SureSentry can forward IP data from the secure network to the public unsecure network(s). In a mirror configuration of the Secure side, the public network communicates with a fully compliant IP proxy that receives one-way UDP packets from the secure side of the Data Diode. With the hardware enforced security through the data diode, the unsecure data has no way to reach the secure network.

Hardware:

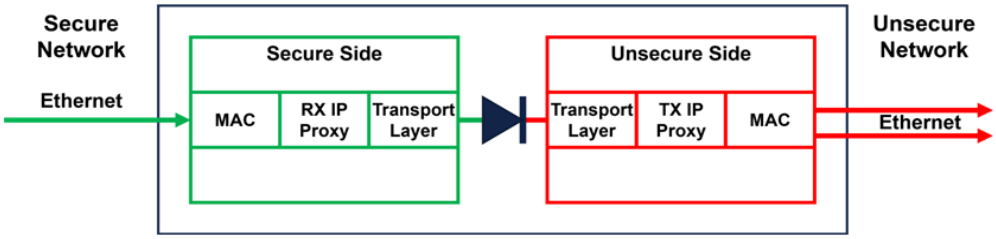
Sunhillo's SureSentry Data Diode features a compact 1U enclosure. The front panel provides dual RJ45 Ethernet ports. These connections support standard 10/100/1000 Ethernet cables, which provides an interface to a LAN's switch, router, or hub. In most applications, the Unsecure side LAN connections are to the public LAN(s).

The secure side Ethernet port connection is located in the center of the rear panel. This connection supports a standard 10/100/1000 Ethernet cable, which provides an interface to a LAN's switch, router, or hub. In most applications, the Secure side LAN connection is to the user's private LAN.

FIPS 140-3 Inside - certificate #5394 The SureSentry uses Sunhillo's FIPS 140-3 certified cryptographic module to provide validated cryptography for the protection of sensitive information where encryption is used (i.e., https, ssh).

Front and Rear Panels

SureSentry™ Data Diode Architecture



Technical Specifications

Part Number
- 010-15-SSDD-S01

Description
SureSentry™ Data Diode, AC Power

SureSentry™ Data Diode
- Hardware enforced cybersecurity
- Maximum throughput: 70 Mbps based on 6000 pps with 1436 byte payload
- Maximum throughput: 10 Mbps based on 10,000 pps with 100 byte payload

Ethernet
- (1) 10/100/1000BASE-T connection to Secure Side/ Private Network
- (2) 10/100/1000BASE-T connections to Unsecure Side/Public Network

Protocols
- UDP/IP

Power
- 100-240VAC, 50-60 Hz, 0.65-0.35A
- 12W Max

Optional Rackmount Sleeve Kit (P/N 010-U-RMS)
- 1U rackmount for standard 19-inch racks
- Captive fasteners allow for fast removal and replacement
- Rackmount sleeve has space for up to two Data

Dimensions

Single SureSentry:
- Height: 1.61 in / 41 mm
- Width: 7.31 in / 185.68 mm
- Depth: 9.17 in / 233 mm

Populated 1U Sleeve:
- Height: 1.75 in / 44.45 mm
- Width: 17 in / 431.8 mm
- Depth: 9.25 in / 234.95 mm

Weight (unpackaged)
- Single Data Diode: 3 lbs / 1.36 kg
- Empty Sleeve: 3 lbs / 1.36 kg
- Fully Populated Sleeve: 9 lbs / 4.08 kg

MTBF
- 1,667,576 hours at 30°C

Environmental (Tested to MIL-STD-810G)
- Storage Temperature: -50°C to +60°C
- Operating Temperature: 0°C to +50°C
- Operating Relative Humidity Range: 10-95%, non-condensing
- Operating Altitude: -300 ft to 10,000 ft

Certifications and Compliance
- CE & UKCA Mark
- RoHS3 Directive EU 2015/863
- REACH
- FCC Part 15, Class B
- UL/CSA/IEC/EN 62368-1
- ETL for Canada and US, 3023031
- FAA-G-2100J: Power
- FIPS 140-3 Level 1 (Certificate #5394)

SureSentry Compliance List

Technical Spec	Compliance
Unidirectional Data Flow	Yes - hardware and software enforced
Protocols	UDP to UDP (IPv4) - multicast, broadcast, unicast
Data Forwarding	Yes - Data Forwarding (UDP to UDP - IPv4) or SNMP Forwarding (separate modes of operation); SFTP Data Forwarding
Physical Separation	Yes - hardware and software enforced
Throughput	10-70 mbps (100 bytes payload = 10 mbps; 1436 bytes payload = 70 mbps)
Management	Yes - secure https (web interface); SSH; NTP (acts as client); Radius; IPv4;IPv6
Monitoring	Yes - realtime status via https web interface
Logging	Yes - syslog forwarding (2) supported + local logs via https and export to text file
Fail-safe behavior	Yes - 2 Unsecure Ethernet Outputs (redundant/duplicate output option)
Redundancy Options	Yes - Network Redundancy - 2 Unsecure Ethernet Outputs (redundant/duplicate output option)
Environmental	CE Mark; UKCA Mark; ROHS3 Directive EU 2015/863; REACH; FCC Part 15, Class B; ICE/EN/UL/CSA 62638-1; ETL for Canada and US, 3023031, FAA-G 2100J Power
Security	FIPS 140-3 certified; Access Control Lists support; HTTPS port is configurable; SFTP/SSH/NTP can be disabled