

### **PrimeDiode** 5001/5010

**Compact data diode** for NLD TOP Secret



## Redefining solutions

## Versatile, secure, and compact

The PrimeDiode 5001/5010 is an assessed, highly reliable data diode that can be used to create effective domain separation. The underlying philosophy is reflected in its compact casing, its high bandwidth, and its flexible options for software proxies. This data diode can be used in environments with classification levels up to and including Stg. GEHEIM (NLD SECRET) and NATO COSMIC (TOP) SECRET.



#### Physical domain separation

The PrimeDiode 5001/5010 guarantees secure one-way traffic across data connections between two domains. Data traffic in one direction is made physically impossible through hardware-based domain separation. Data traffic in the other direction remains possible, at speeds of 1G (PrimeDiode 5001) or 10G (Prime Diode 5010). The PrimeDiode 5001/5010 has an idle pattern generator that simplifies link-up with network devices.

This makes the PrimeDiode 5001/5010 suitable for two important purposes:

#### Confidentiality

The de PrimeDiode 5001/5010 prevents data leaking out of a confidential domain.

#### Integrity

The de PrimeDiode 5001/5010 ensures that the integrity of a domain cannot be compromised, because it stops attackers from sending their own network traffic into the domain.

#### Flexibility through micro proxies

A data diode can be extended with proxy software that runs on separate hardware. A proxy can consist of various functionalities, for example a "data car wash" for data being imported into a confidential domain. This converts the incoming network protocol into a unidirectional data flow (proxy handlers) and scans it, for instance, for viruses (data handlers).



#### The advantages of the PrimeDiode 5001/5010:

- Can be used for all classification levels up to and including Stg. ZEER GEHEIM (NLD SECRET), NATO (TOP) SECRET
- Compact
- Cost-effective
- High speed
- Low latency (less than 1 microsecond)
- Assessed by the National Communications Security Agency
- Vibration and shock proof

Roadmap: In due course, the following functionalities will be added to the PrimeDiode 5001/5010

- Applicable with virtualized proxies thanks to TCP micro proxies
- Can be used with precise time synchronization (< 10 us) through NTP or PTP
- Automatic switching between 1G and 10G

The PrimeDiode 5001/5010 will offer the unique possibility of integrating simple protocols in the diode in advance as so-called micro proxies (see roadmap). A **TCP micro proxy** for instance guarantees that other devices will have a reliable connection with the PrimeDiode 5001/5010. This means you can run proxy software in a virtualized environment, without requiring separate proxy hardware – thus saving a lot of space. An **NTP micro proxy** ensures exact time synchronization between the two network domains.

#### Compact shape factor

Thanks to its modest casing, you can place up to 12 Prime-Diodes 5001/5010 in a single 2U rack. This means the PrimeDiode 5001/5010 is particularly suitable for environments with many domain separations and limited space. Using TCP micro proxies and virtualized software proxies makes it possible to optimize the use of space.

These and other micro proxies are available upon request and can be tailored to your specific requirements.

# Technical specifications

#### PrimeDiode 5001/5010

Classification   UNCLASSIFIED up to and including Stg. ZEER GEHEIM (NLD TOP SECRET), NATO COSMIC (TOP) Secret     Hardware security   'Tamper evident'     Tempest   SDIP-27/1 Level A     Bandwidth   PrimeDiode 5001   1 Gbps     MTU size   Unlimited     Latency   <1 µs     Connections     Types of connections   PrimeDiode 5001   100 Gbps     Types of connections   PrimeDiode 5001   100 GBASE-5X     PrimeDiode 5010   100 GBASE-5X   100 GBASE-5X     PrimeDiode 5010   100 GBASE-5X   100 GBASE-5X     PrimeDiode 5010   100 GBASE-SR'   (multi-mode fiber)     CER GEACH, RoHS     Power   -10W (PrimeDiode 5010)   10 GBASE-SR'     Kegulatory compliance   CE, REACH, RoHS   -20°C - 85°C     Vibration resistance   IEC 60068-2-6:2008, IEC 600-68-2-27:2008     Capacity   12 x PrimeDiode 5001/5010   -200C     Power   200W (afhankelijk van modules ingezet)   Cooling     Cooling   Active   -200V (afhankelijk van modules ingezet)     Power   200W (afhankelijk van modules 500-60-60/2 (redundant)   -200V (afhankelijk van modules ingezet)		Security		
Tempest   SDIP-27/1 Level A     Functionality   I Gbps     Bandwidth   PrimeDiode 5001   1 Gbps     MTU size   Unlimited     Latency   <1 μs	Classification			
Functionality     Bandwidth   PrimeDiode 5001   1 Gbps     PrimeDiode 5010   10 Gbps     MTU size   Unlimited     Latency   <1 μs	Hardware security	'Tamper evident'		
BandwidthPrimeDiode 5001 PrimeDiode 50101 Gbps 10 GbpsMTU sizeUnlimitedLatency<1 μs	Tempest	SDIP-27/1 Level A		
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MTU size   Unlimited     Latency   <1µs	Bandwidth			
Latency   <1µs			IU Gops	
Image: Second				
Types of connectionsPrimeDiode 5001 PrimeDiode 5010 (duplex LC fibers)Optisch 1G 10G Ethernet (duplex LC fibers)Ethernet standardsPrimeDiode 5001 (multi-mode fiber)1000BASE-SX 10GBASE-SR1 (multi-mode fiber)Regulatory complianceCE, REACH, RoHS - 10W (PrimeDiode 5010)Measurements262 x 85 x 33 mm - 20°C - 85°CStorage temperature Vibration resistance-20°C - 85°CVibration resistanceIEC 60068-2-6:2008, IEC 60068-2-27:2008Capacity12 x PrimeDiode 5001/5010Power200W (afhankelijk van modules ingezet)Cooling Power inputActivePower input100Vac/240Vac 50-60Hz (redundant)		< 1µs		
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Image: Ethernet standards(duplex LC fibers) PrimeDiode 5001 PrimeDiode 5010 (multi-mode fiber)1000BASE-SX 10GBASE-SR' (DGBASE-SR')Regulatory complianceHardwareRegulatory complianceCE, REACH, RoHSPower~10W (PrimeDiode 5010)Measurements262 x 85 x 33 mmStorage temperature20°C - 85°CVibration resistanceEC 60068-2-6:2008, IEC 60068-2-27:2008PowerPrimeFlex rackCapacity12 x PrimeDiode 5001/5010Power200W (afhankelijk van modules ingezet)CoolingActivePower input100Vac/240Vac 50-60Hz (redundant)	Types of connections			
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	Cooling	Active		
Measurements Rackmount 19 inch (48,26 cm); 2U, diepte 400 mm	Power input	100Vac/240Vac 50-60Hz (re	100Vac/240Vac 50-60Hz (redundant)	
	Measurements	Rackmount 19 inch (48,26 cm); 2U, diepte 400 mm		

Specifications may be subject to change. Please contact us to discuss your application. 'Single-mode 10GBASE-LR/LRM/ER upon request.

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