

NEOXPacketRoo Unidirectional Data Flow Solution

Data Diode | Secure File Transfer | Air Gap Assurance | Galvanic Isolation



In critical sectors like energy supply, transportation, defense, and industrial manufacturing, protecting IT/OT networks from cyberattacks is essential, especially in applications demanding Safety Integrity Levels (SIL) 3 and 4. Implementing an air gap between OT and IT environments strengthens security by physically separating operational technology systems from external IT networks, significantly reducing the risk of cyber threats.

To enable operators to transmit data, such as sensor information, from OT networks to IT networks while maintaining the required air gap, a robust solution is necessary to securely bridge both environments.

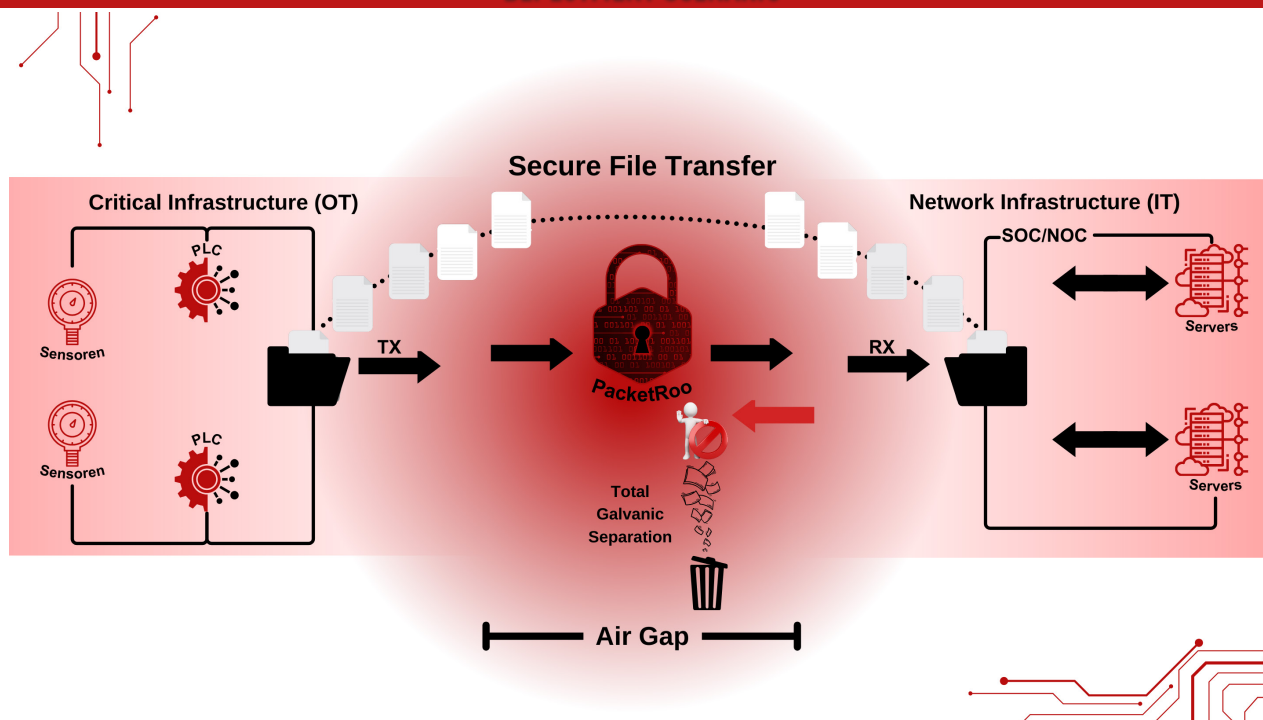
The NEOXPacketRoo is a specialized solution bundle featuring a physical data diode that enforces full galvanic isolation between networks while allowing unidirectional signal transmission, preserving the critical air gap. To eliminate any attack surface on the physical layer, operators can either use their own data transfer methods leveraging the PacketRoo's diode functionality or utilize the NEOXSecureFileTransmitter software, which provides secure, granular, and one-way file transfer from OT to IT.

The PacketRoo, combined with the NEOXSecureFileTransmitter, offers a scalable and high-performance solution for both Windows and Linux hosts, enabling seamless unidirectional data transmission. Each component of the bundle is also available separately, and if an existing data diode is already in place to bridge the air gap between networks, the NEOXSecureFileTransmitter remains fully vendor-agnostic. This flexibility also applies to the PacketRoo itself.

To reduce the risk of configuration errors, the PacketRoo is available only in fixed configurations, with no option to modify port settings after deployment. As a fully sealed system, it is designed for both civilian and military use cases, ensuring robust and secure operation.

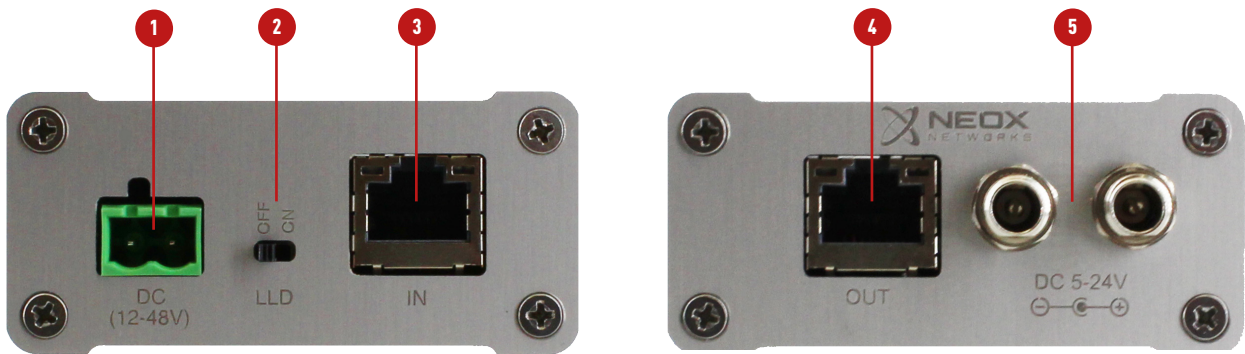
-  Unidirectional Data Flow
-  Galvanic Isolation
-  Vendor Agnostic
-  Air Gap Assurance
-  For Harsh Environments
-  Automatic Speed Sync
-  Link Loss Detection
-  Error Prevention through Fixed Configuration
-  Windows & Linux Support
-  Made in Germany

DEPLOYMENT SCENARIO



KEY FEATURES

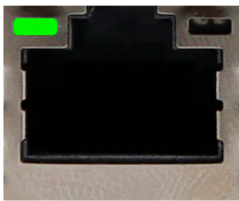
- **Unidirectional Data Flow with Galvanic Isolation:**
 - The NEOXPacketRoo enforces galvanic isolation, allowing data to flow only one way (OT to IT) and maintaining the air gap for maximum security.
- **Air Gap Assurance:**
 - Maintains a physical air gap between OT and IT networks, reducing the risk of cyber threats.
- **Real-Time Monitoring & Data Integrity:**
 - Supports integrity checks and real-time monitoring to detect anomalies during data transfers.
- **Hardware-Based Security:**
 - Hardware-enforced unidirectional data flow ensures OT network protection from external attacks.
- **Speed Sync Feature:**
 - Selects and maintains highest common speed for input and output port. Ports are always ensured to have same speed if possible.
- **Link Loss Detection (LLD):**
 - Link loss is propagated between input and output ports.
- **Vendor-Agnostic, Secure File Transfer:**
 - Comes with NEOXSecureFileTransmitter software for unidirectional file transfer, compatible with Windows, Linux, and third-party diodes.
- **Sealed Design for Harsh Environments:**
 - Tamper-proof and sealed, it's designed for military and civilian use in rugged conditions.
- **Fixed Configuration for Error Prevention:**
 - Pre-configured ports eliminate configuration errors and ensure a secure, error-free deployment.



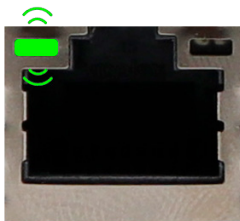
INTERFACES

1	1x Connector rated for 12-48V DC	4	1x RJ45 (three-speed) as output (label: OUT)
2	Link Loss Detection (LLD) switch	5	2x Barrel jack rated for (redundant) 5V-24V DC
3	1x RJ45 (three-speed) as input (label: IN)		

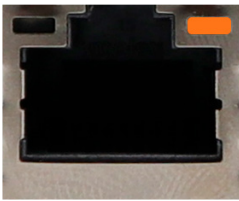
RJ45 PORT LEDS



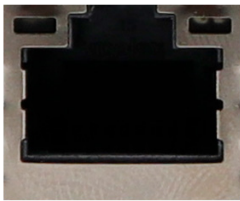
Active link



Link Activity



Gigabit link



10M/100M link

Green LED (left) indicates link state and activity.

- LED on for active link
- LED blinking for link activity

Orange LED (right) indicates speed status

- LED on for Gigabit link presence
- LED off for 10M/100M link presence

LINK LOSS DETECTION

Link Loss Detection (LLD) detects a non-existent link on one of its network ports and then shuts down the other network port.



TECHNICAL SPECIFICATIONS

HARDWARE	DIMENSIONS (WxHxD)	WEIGHT	POWER SUPPLY
2x 10M/100M/1000M LAN	70 mm x 32 mm x 145 mm	ca. 260 g	2x DC 5V (included)
Redundant and hot-swappable DC power supplies	27.6" x 12.6" x 57.1"	ca. 0.57 lb	1x DC 12-48 V

OPERATING TEMPERATURE

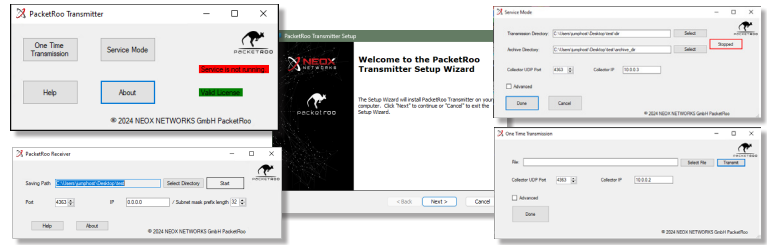
10° to 85° C	at sea level
50° to 176° F	at sea level

RELATIVE HUMIDITY

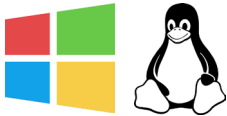
Operation	8% to 90% relative humidity (Rh), non-condensing
Storage	5% to 95% relative humidity (Rh), non-condensing

PART NUMBERS

SKU	INTERFACES	SPEED	PRODUCT TYPE
PRO-DD-1G	2x RJ45	10/100/1000 MBit	Hardware
PRO-SFT-SW	n/a	n/a	Software



PRO-DD-1G



PRO-SFT-SW

ACCESSORIES

INSTALLATION & MOUNTING

ITEM NO.	DESCRIPTION
PRP-1U3-V2	Server rack mounting frame for 3 PacketRoo
PRP-1U3-BP-V2	Blank plate for mounting frame PRP-1U3-V2
PRO-1U3-CLIP	Rackmount frame bracket for server rack monuting frame PRP-1U3-V2
PRP-DIN-CLIP	DIN rail mounting clip



PRP-DIN-CLIP



PRO-1U3-CLIP



PRP-1U3-V2

PRP-1U3-BP-V2

POWER SUPPLIES & ACCESSORIES

ITEM NO.	DESCRIPTION
PRP-PS-INT	PSU with EU, UK, and US plug head
PRP-PS-*-A	Plug head *EU, *UK or *US
PRP-PS-EU	Power supply unit with EU plug (head)
PRP-PS-UK	Power supply unit with UK plug (head)
PRP-PS-US	Power supply unit with US plug (head)
PRP-PS-C14-25W	Power supply unit with C14 socket - connected to PSU via C13-C14 cable



PRP-PS-INT



PRP-PS-C14-25W