

# IEN-9648-RW

Managed 8 x 10/100/1000 RJ45 &  
4 x GbE SFP Industrial Switch, Railway Approval

## Description

IEN-9648-RW is a high-performance 8-port 10/100/1000 RJ45 downlink and 4-port GbE SFP uplink managed industrial switch designed to meet the thermal requirements and environmental conditions of railway applications. The downlink ports connect to industrial devices and controllers. The fiber ports allow noise-free Gigabit Ethernet transmission for fast recovery, reliable and long-distance to other switches or the control center.

This switch is built with industrial-grade components, enclosed in an IP30 aluminum case with high thermal conductivity to protect the device from tools and hazards. To ensure reliability the redundant power supply and alarm relay contact on the terminal block ensures non-stop operations and issues alerts if power fails. Designed to withstand vibration, shock, free fall, and temperatures ranging from -40°C~75°C (-40°F~167°F) it suits places like tunnels.



RoHS  
CE FCC



## Features Highlight

### Robust Switch Performance

IEN-9648-RW is built with IP30 aluminum case protection, surge and ESD protection to deliver robust performance and withstand extreme conditions in Industrial environments. The SFP ports support 1000Mbps for high bandwidth transmissions and the SFP DDM feature enables service providers to monitor SFP parameters. In case of any abnormal hardware condition, the switch automatically sends warnings through email and relay output with real-time alarm messages. This assists the system administrators to immediately react to emergency events and diagnose the faults more efficiently for smoother network operations.



### Redundant Power system

To guarantee power runs continuously the switch is designed to be simultaneously connected to two power supplies and an alarm through a standard industrial terminal block. If one power supply stops working the switch will start feeding its power on the alternative power supply and the alarm will go off to notify technicians about the event.

### Advanced QoS Support

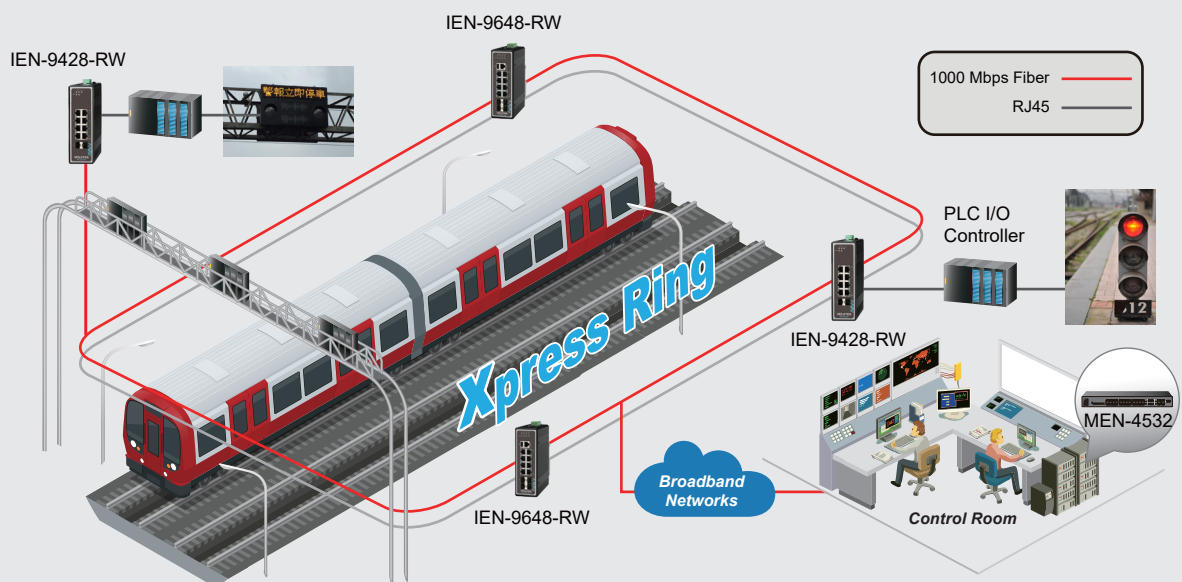
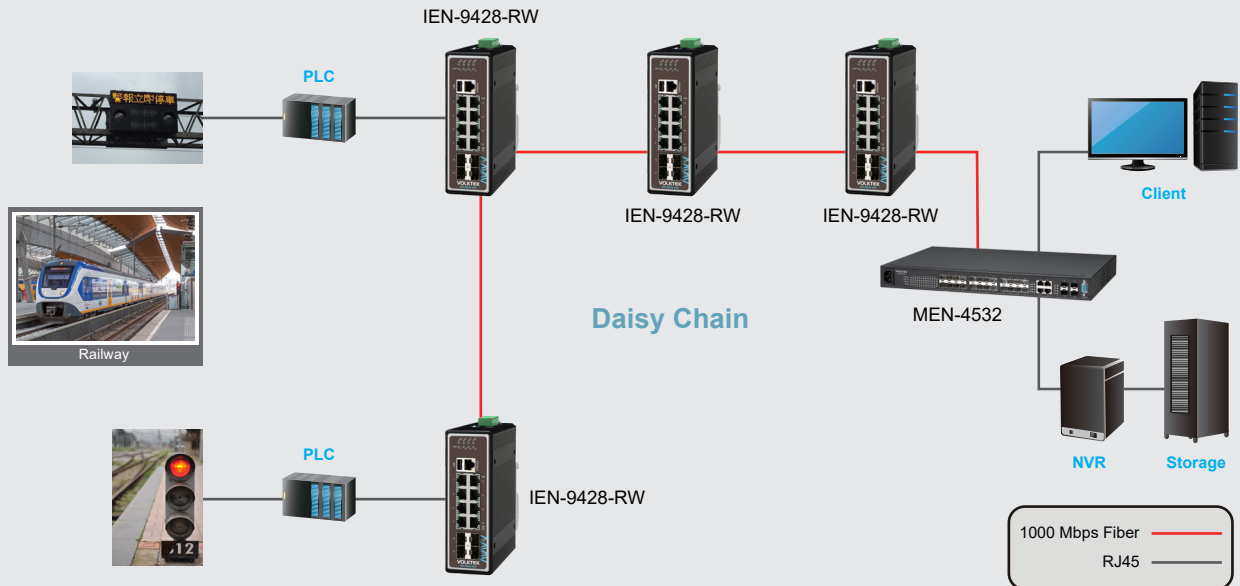
Understanding the need of smoother data transmissions for specific surveillance applications, the IEN-9428-RW supports IEEE 802.1p Quality of Service (QoS) which enhances bandwidth utilization to ensure time sensitive data gets delivered efficiently to mission-critical applications without any delay even during burst of high traffic. Addition to the beneficial fetures, the switch is also configured with efficient Storm Control functionalities which can only allow the traffic of a predefined rate. Both the QoS and Storm Control function can easily managed by DIP Switch without any burden of manual enable and disable.

### Eco-friendly Green Ethernet Design

To address the concerns of increasing power consumption, IEN-9428-RW implements IEEE 802.3az Energy Efficient Ethernet (EEE) compliant Green Ethernet technology. This eco-friendly design allows the switch to automatically adjust power consumption and conserve energy during the periods of low data activity. This helps you to lower the energy usage significantly and help you save operational costs.

## Applications

IEN-9648-RW/9428-RW series switches are designed to meet the demands of railway applications, including rolling stock and wayside installations. The switches guarantee reliable operation in industrial environments where vibration and shock are common place. Gigabit backbone, redundant ring increase the reliability of the communications and reduce cabling and wiring costs. These are compliant with mandatory sections of EN 50155, covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making the switches suitable for a variety of Railway applications.



## Specifications

Standards	
IEEE 802.3	10BASE-T
IEEE 802.3u	100BASE-TX
IEEE 802.3ab	1000BASE-T
IEEE 802.3z	1000BASE-SX/LX
IEEE 802.3	Nway Auto-negotiation
IEEE 802.3x	Flow Control
IEEE 802.3ad	Link Aggregation
IEEE 802.1AB	LLDP
IEEE 802.1ad	QinQ
IEEE 802.1D	STP
IEEE 802.1w	RSTP
IEEE 802.1s	MSTP
IEEE 802.1p	Class of Service
IEEE 802.1Q	VLAN Tagging
IEEE 802.1X	Port Authentication
IEEE 1588v2	PTP
Interface	
Ports	8 x 10/100/1000BASE-T (RJ45)
	4 x GbE SFP Slots
	1 x RJ45 Console Port
	1 x USB Port
DIP Switch	Primary/Redundant Power Voltage Drop Alarm setting
LED Panel	PWR, RPS, ALM, POST, 1000, LNK/ACT
Features	
Performance	Jumbo frame Size: 10KBytes
	MAC Table Entries: 16K
	Active VLAN: 4K
	Switch Fabric: 24Gbps
	L2 Forwarding Rate: 17.9Mpps
Management	CLI, Telnet/SSH, HTTP/HTTPS, SNMP v1/v2c/v3, RMON Statistics, SNMP Trap, MVLAN, Firmware Upgradable, Configuration Backup/Restore, Syslog, STP, DHCP Client/Relay/Option 82, DHCP Option 66/67, Service Control, SFP DDM/Info, Mirroring, Auto-Provisioning, Modbus TCP, LLDP, UDLD, IEEE 1588 v1/v2, IEEE, e-mail Alarm, Service Control, PPPoE IA, MAC Aging Time
Reliability	STP/RSTP/MSTP, Xpress Ring, ERPS v1/v2, Dual Homing, LACP, Code Redundancy, Static Trunk
VLAN	IEEE 802.1Q, GARP/GVRP, Port-based VLAN, MAC-based VLAN, IP Subnet-based VLAN, Protocol-based VLAN, QinQ, VLAN Translation, Service-based VLAN
Traffic Control	IGMP snooping v1/v2/v3/, IGMP Querier/Throttling/ Proxy, MLD Snooping, MVR, 802.1p QoS, Flow Control, Abnormal Traffic Detection, Rate Limit, Storm Control, Port Isolation, Loop Detection, Static Route, Inter-VLAN Routing
Security	DHCP Snooping, ACL, SSH, Port Security, Port-based 802.1x, TACACS+, MAC Search, Refusal MAC, Static MAC, DHCP Server Screening, ARP Inspection, BPDU Guard/Filter, Root Guard, Management Host

Power	
Input Voltage	Primary inputs: 12~48VDC Redundant inputs: 12~48VDC
Connection	Terminal Block
Power Consumption	System: 18W
Alarm Relay	One relay output, 1A @ 24V DC
Mechanical and Environment	
Housing	Aluminum (IP30 Protection)
Mounting	DIN-Rail
Operating Temperature	-40°C~75°C (-40°F~167°F)
Storage Temperature	-40°C~85°C (-40°F~185°F)
Operating Humidity	5 to 95% RH (non-condensing)
Storage Humidity	5 to 95% RH (non-condensing)
Weight	955 g (2.1 lb)
Dimension (WxHxD)	50 x 164.9 x 122.2 mm (1.97 x 6.49 x 4.81 in)
Certifications	
EMI	FCC Part 15 Subpart B Class A, EN 55022: class A EN 55011: 2009 class A, EN 61000-6-4
EMS	EN 55024, EN 61000-6-2, EN 61000-4-2 (ESD) EN 61000-4-3 (RS), EN 61000-4-4 (Burst) EN 61000-4-5 (Surge), EN 61000-4-6 (CS) EN 61000-4-8 (PFMF)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Rail Traffic	EN 50155 EN 50121-4
Ordering Information	
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Optional Accessories	
Power Supply	SDR-120-48: 120W DIN-Rail 48V DC Industrial Power Supply, -25°C~70°C (-13°F~158°F)
GBM-104	1000BASE-SX 1.25G, Multi-mode SFP, 500m
GBM-123TS	1000BASE-LX, Bi-Di SFP TX:1310/RX:1550 Single Mode, 10Km, 0°C~70°C (32°F~158°F)
GBM-123RS	1000BASE-LX, Bi-Di SFP TX:1550/RX:1310 Single Mode, 10Km, 0°C~70°C (32°F~158°F)

\* The SFP communication distance upon the request.

\* Industrial SFP with wide operating temperature from -40°C~85°C (-40°F~185°F) is available upon request.

\* Specifications subject to change without notice.

## Dimension

