PCS-9882Rx

DIN Rail Managed Ethernet Switch

The PCS-9882Rx series DIN rail managed Ethernet switches are especially designed for compact site and space saving installation scenarios such as rail traffic system, industry process control, distribution network, renewable energy generation, etc. It supports high data transmission rate to meet the increasing requirements in the developing network communication field.

The following figure shows a typical application of this device in substation automation system.

The following table shows the subtypes. Different Ethernet port arrangements are provided.

Type	1000Mbps Port	10/100Mbps Port	
	Optic	Optic	Copper
PCS-9882RA	0	0~4	8
PCS-9882RB	0~2	0~4	18
PCS-9882RC	0~2	0~20	0

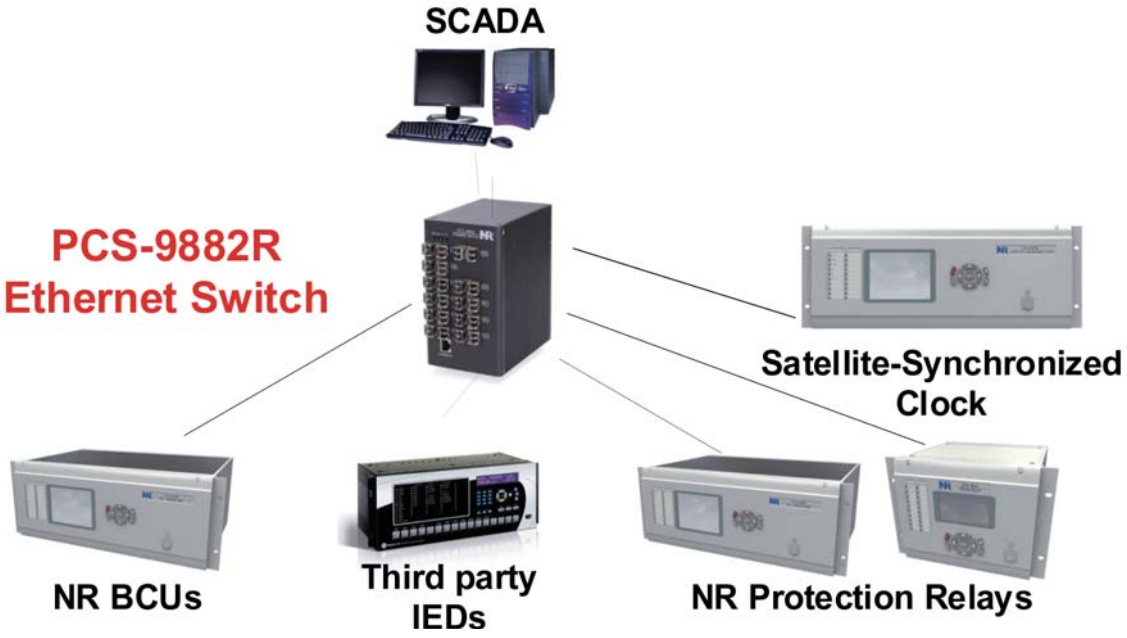

Figure 1 Typical application

Function

Ethernet Switching

- 10/100Mbps self-adaptive electrical Ethernet ports
- These ports are compatible with the 10BASE-T/100BASE-TX standard and are self-adaptive for crossover and straight-through network cable. MDI/MDIX automatic identification is supported.
- 100Mbps fiber port adopting SFP socket
- The SFP transceiver complying with IEEE 802.3 100BASE-FX standard can be hot plugged.
- 1000Mbps fiber port adopting SFP socket
- The SFP transceiver complying with IEEE 802.3 1000BASE-SX standard can be hot plugged.
- The switching mode is non-blocking store and forward.
- Support of IEEE 802.3x flow control.

Flow Control

- Network storm suppression
- The upper rate limit of broadcasting/multicasting/addressing-failure message is configurable.
- Port rate limitation
- The message forwarding rate and burst rate of each port is configurable.
- Port mirror
- Monitoring the inflow/outflow data of all the ports can be realized through one designed port.
- Link aggregation
- Link aggregation can be based on port number, MAC address, etc.
- Quality of service control
- The message priority control based on IEEE 802.1p is supported, including the strict priority strategy and the weighted priority strategy.

VLAN

- Support of VLAN based on port
- Support of VLAN based on MAC address
- Support of VLAN based on protocol
- Support of VLAN based on IEEE 802.1Q
- Support of overlapped VLAN configuration
- Support of VLAN tag insertion, modification and deletion
- Support of GARP VLAN registration protocol

Ring Network

- Support of STP (IEEE 802.1D), RSTP (IEEE 802.1w) and MSTP ring network protocol so as to fast switch to a backup link in case of link failure
- Support of NR-Ring private protocol with faster ring network recovery speed

Multicast

- Support of VLAN multicast based on IEEE802.1Q
- Support of static multicast management based on MAC address
- Support of GMRP dynamic multicast management
- Support of IGMP snooping dynamic multicast management.

Port Security

- Support of port security certification based on static MAC address
- Support of port security certification based on IEEE 802.1X
- Support of network security protocol based on SSL/SSH

Management Method

- Support of WEB Server, Telnet and CLI
- Support of SNMP V1/V2C/V3.
- Support of RMON
- Providing of alarm output contact and block output contact via relay

Features

The PCS-9882R Ethernet switches adopts high-performance switching chip and excellent industrial design to keep the line speed forwarding under full duplex and full rate operation of all the ports. The design and manufacturing of this device has fully considered various adverse conditions and interference factors in industrial applications to ensure a reliable data transmission under harsh environments.

- This device is suitable for the process application in a IEC 61850 and digital substation.
- Support of IEC 61850 modeling
- Support of switch monitoring with IEC 61850 protocol
- The advanced heat emission technology (protected by

patent) is applied to ensure an excellent heat emission performance.

- The advanced technologies, including totally-enclosed chassis, partitioned grounding connection, anti-interference power supply, PCB division by voltage level and cable shielding, ensure no package loss under strong electromagnetic interference.
- The compact parallel processing technology is applied to ensure an excellent store and transmission performance.

Delay (Megabit port)	2μs
Delay (Gigabit port)	1μs

- The optimized RSTP protocol is adopted and the device failover time has achieved an international leading level: < 2ms per hop.
- The dual load-sharing hot-swappable power supplies technology is supported for both AC and DC power supply.
- The processing capacity guarantees a handling of any report message (64~1518 bytes) without any loss of package.
- VLAN, traffic prioritization, RSTP, port security, GMRP/GVRP, IGMP snooping are supported to meet the process level network requirements in a digital substation.
- The port security strategy based on static MAC address or 802.1X guarantees the access security of connected IEDs.
- SSL/SSH is supported, so as to ensure the security access control.
- The device is designed as an industrial managed Ethernet switch with abundant functions (e.g.: port flow control, network storm limitation, port mirroring, SNMP, RMON, WEB, port trunking, SNTP, etc.).
- In case of a power supply short interruption, this device can still work for up to 100ms, so as to ensure enough time for data transmission.
- Several Gigabit optical ports are provided to improve the cascading performance.