



Introduction

Rail Signaling System is the most important part of the Train Control System. The adopting technology has been developed from relay system interlocking, computer based interlocking, to CTCs-2, CTCs-3. The communication has been developed from traditional hard wire, serial communication to present industrial Ethernet. For the purpose to establish a safe, reliable, standard unified new generation of security data network, China Rail Corporation has released the Standards of High Speed Rail Signaling System Security Data Network, Version 3.0. It defines all the functional requirements, networking requirements, the selection of equipment, network structure, network management and etc. for the Security Data Network.

System Requirements

- Supports the isolation of different lines/bureaus through layer 3 devices.
- Supports Gigabit/100M fiber ring network and excellent self-recovering performance in a huge network.
- The Signaling System Security Data Network should ensure the safe and reliable communication of security data between stations, relays, and signaling devices in control centers, such as RBC, TSRS.
- The latency of data transmission within network devices in each single node is less than 50 microseconds. The recovery time of the data communication within a single network is less than 50 milliseconds. The recovery time of the data communication between networks is less than 500 milliseconds.
- Supports network management system which enables the monitoring, recording, alarming and maintenance of the network connection status, device working status and devices operating parameters.
- Resistant to the strong electromagnetic interference and voltage mutations.

Why Kyland

Taking part of driving Standards of High Speed Rail Signaling System Security Data Network, Version 3.0, Kyland released Ethernet switches and NMS fully meet the standards.

- Supports layer 3 routing protocols such as RIP, static routing.
- Supports multiple ring redundancy protocol such as STP/RSTP, MSTP, DT-Ring and IEC61439-6(DRP). The recovery time is less than 20ms.
- Supports NTP, the accuracy reaches 10ms.
- Kyview and Kyvision 3.0 Pro network management system providing network monitoring and management.
- Supports optical power detection and data upload.
- Supports operating temperature range of -40 to 85°C
- Complies with EN50121-4, high EMC level.

Recommended Products



SICOM6424SM

- Supports maximum 8 Gigabit SFP ports and 16 100M ports
- Supports STP/RSTP, MSTP, DT-Ring, and IEC61439-6(DRP) redundant ring protocol
- Supports layer 3 protocols such as RIP, static routing. Supports VRRP.
- Supports optical power detection.
- Complies with IEC61850-3 and EN50121-4
- Operating temperature of -40 to 85°C



SICOM3024

- Supports maximum 4 Gigabit SFP ports and 16 100M ports
- Supports STP/RSTP, MSTP, DT-Ring, and IEC61439-6(DRP) redundant ring protocol
- Supports VLAN partition based on application and management
- Supports optical power detection.
- Complies with IEC61850-3 and EN50121-4
- Operating temperature of -40 to 85°C



Kyview

- Friendly operating interface, several layers of topology navigation structure, complete topology, alarm, network, device information, which provide clear & wealth management information.
- Clear navigation view provides global overview of each level of signaling system security network from administration, line, station, room, cabinet to devices.
- Perfect management roles and authorities, log and backup functionalities enable the high security and reliability of the system.
- Supports southbound interface based on Corba which can be connected to the northbound of NMS. NMS+EMS, forming the complete integrated communication management system with high management efficiency and lower management cost.



Kyvision Pro

- Supports automatic topology discovery, topology import, export, dynamic refresh and manual drawing
- Supports network event replay
- Supports alarm dynamic display, alarm confirmation, deleting and filtering
- Provide northbound interface based on Corba which can be connected with the southbound interface of integrated managed system NMS.
- Supports Syslog message receiving

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High Speed Rail Signaling System Security Data Network Solutions

