



SICOM3000 Presentation

8+2G Port Gigabit Managed
Industrial Ethernet Switch

SICOM3000

LED: Power Supplies

LED: Working Status

Optional Dual Gigabit Fiber Ports

- Pluggable optic SFP
- LC or SC connector
- Distance up to 80km

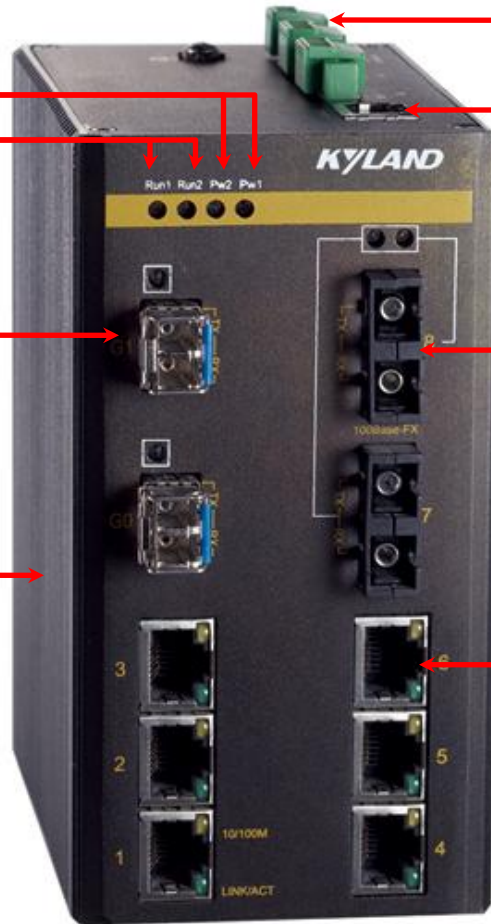
Casing: Ribbed aluminum case (Fanless)

Protection class: IP40

Installation: DIN-Rail or wall mounting

Operating Temperature: -40 to 85° C

Humidity: 0-95% (non condensing)



Power input:

24VDC (18-36VDC),
48VDC (36-72VDC),
dual redundant power inputs;
110VAC/110VDC (85-165VAC/66-154VDC),
220VAC/220VDC(132-300VAC/176-400VDC),
single power input

Console Port

Dual 100BaseFX Ports

- 100FX Single Mode
- 100FX Multi Mode
- LC/ST/SC Connector

Or Dual 10/100BaseTX Ports

Up to 8 10/100Base-TX Ports

KOS(Kyland Operating System) Features



- Quality of Service (IEEE 802.1p)
- VLAN (IEEE 802.1Q)
- Link Aggregation (802.3ad)
- IGMP Snooping
- SNMP (Simple Network Management Protocol)
- SCADA and Industrial Automation
- Broadcast Storm Filtering
- Loss of Link Management
- Port Mirroring
- Port Configuration and Status
- Event Logging and Alarms
- HTML Web Browser and Telnet User Interfaces
- Configuration via ASCII Text File
- Command Line Interface (CLI)

Cyber Security



Passwords - Multi-level user passwords secures switch against unauthorized configuration

SSH / SSL - Extends capability of password protection to add 128-bit encryption of passwords and data as they cross the network

Enable/Disable Ports - Capability to disable ports so that traffic can not pass

802.1Q VLAN - Provides the ability to logically segregate traffic between predefined ports on switches

MAC Based Port Security - The ability to secure ports on a switch so only specific Devices / MAC addresses can communicate via that port

SNMPv3 - encrypted authentication access security and data encryption (CBC-DES with 56-bit encryption key)

EMI & Environmental Approvals



- IEC61000-4-2 (ESD): $\pm 8\text{KV}$ contact discharge, $\pm 15\text{KV}$ air discharge
- IEC61000-4-3 (RS): 10V/M (80-1000MHz)
- IEC61000-4-4 (EFT): $\pm 4\text{KV}$ power line, $\pm 2\text{KV}$ data line
- IEC61000-4-5 (Surge): power line $\pm 4\text{KV}$ CM/ $\pm 2\text{KV}$ DM, data line $\pm 2\text{KV}$
- IEC61000-4-6 (CS): 3V (10KHZ-150KHZ), 10V (150KHz-80MHz)
- IEC61000-4-8 (Power frequency magnetic field): 100A/m cont. 1000A/m , 1s to 3s
- IEC61000-4-12/18 (Damped oscillatory wave): 2.5KV CM, 1KV DM
- IEC61000-4-10 (Damped oscillatory): 30A/m
- IEC61000-4-16 (Common mode conduct): 30V cont. 300V , 1s
- FCC CFR47 Part 15/EN55022: Class A&B
- IEC61000-6-2 (Industrial Standards), IEC61850-3(Substations), IEEE1613 (Electric Power Substations), EN50155, EN50121-4 (Railway Applications)

Redundant Software Supported

The screenshot displays a web management interface for software versions. The title bar reads 'Web Management System' and the menu bar includes '中文 About Help Exit'. The main content area is titled 'Software Version' and contains a table with the following data:

ID	Version	Date	Status
1	v1.0.0	2009-4-17 10:02	Inactive
2	v1.3.8	2009-4-8 13:19	Active

Below the table are two buttons: 'Apply' and 'Help'. The footer of the interface reads 'Kyland Technology Co., LTD. All Rights Reserved'.

- Two firmwares are supported, one is active while the other is inactive.
- This redundant firmware design offers high reliability and enables easy software upgrades.

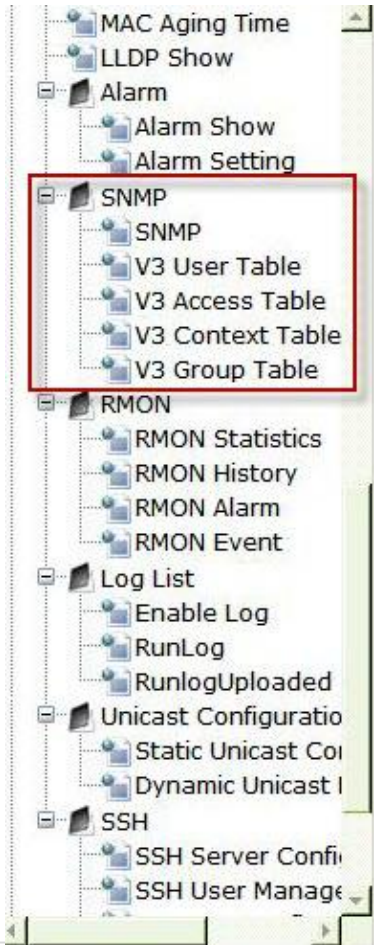
SNTP

The screenshot displays the SNTP configuration interface. On the left, a tree view shows the configuration hierarchy, with 'SNTP' selected and highlighted in a red box. The main configuration area includes the following fields and controls:

- SNTP State:** A dropdown menu set to 'Disable'.
- Server IP:** An empty text input field.
- Interval Time:** An empty text input field with a range of '(16-16284Sec)'.
- time zone:** A dropdown menu set to 'GMT 0'.
- Buttons:** 'Apply' and 'Help' buttons are located below the time zone field.
- Time Fields:**
 - Server Time:** 0000.00.00 00:00:00
 - Device Time:** 2000.02.17 22:48:35
 - update:** A dropdown menu with an 'Apply' button next to it.
- Table:** A table with columns: Number, Server IP, Server State, Time Zone, Interval Time, Synchronization.
- Buttons:** A 'Delete' button is located below the table.

SNTP (Simple Network Time Protocol) , an effective way to provide time synchronization with a precision of 1 to 50 ms.

SNMPv3

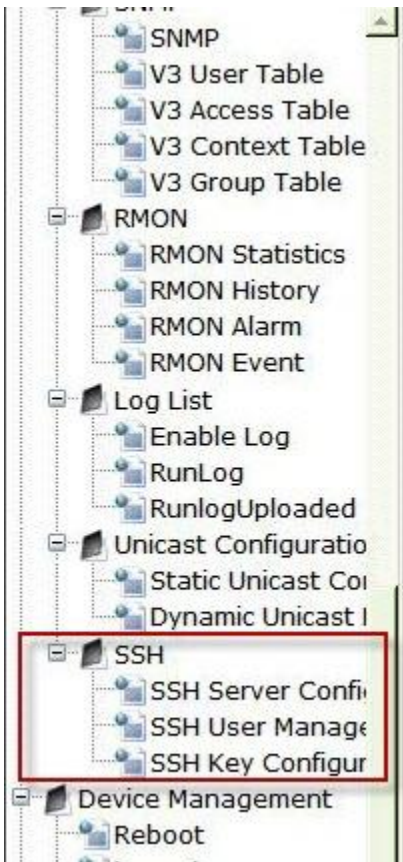


SNMP V3

USER TABLE

Number	State	User Name	Authentication protocol	Authentication password
1	---		NONE	
2	---		NONE	
			HMAC-MD5	
3	---		HMAC-SHA	
4	---		NONE	
5	---		NONE	
6	---		NONE	
7	---		NONE	
8	---		NONE	
9	---		NONE	
10	---		NONE	
11	---		NONE	
12	---		NONE	
13	---		NONE	
14	---		NONE	

SSH/SSL

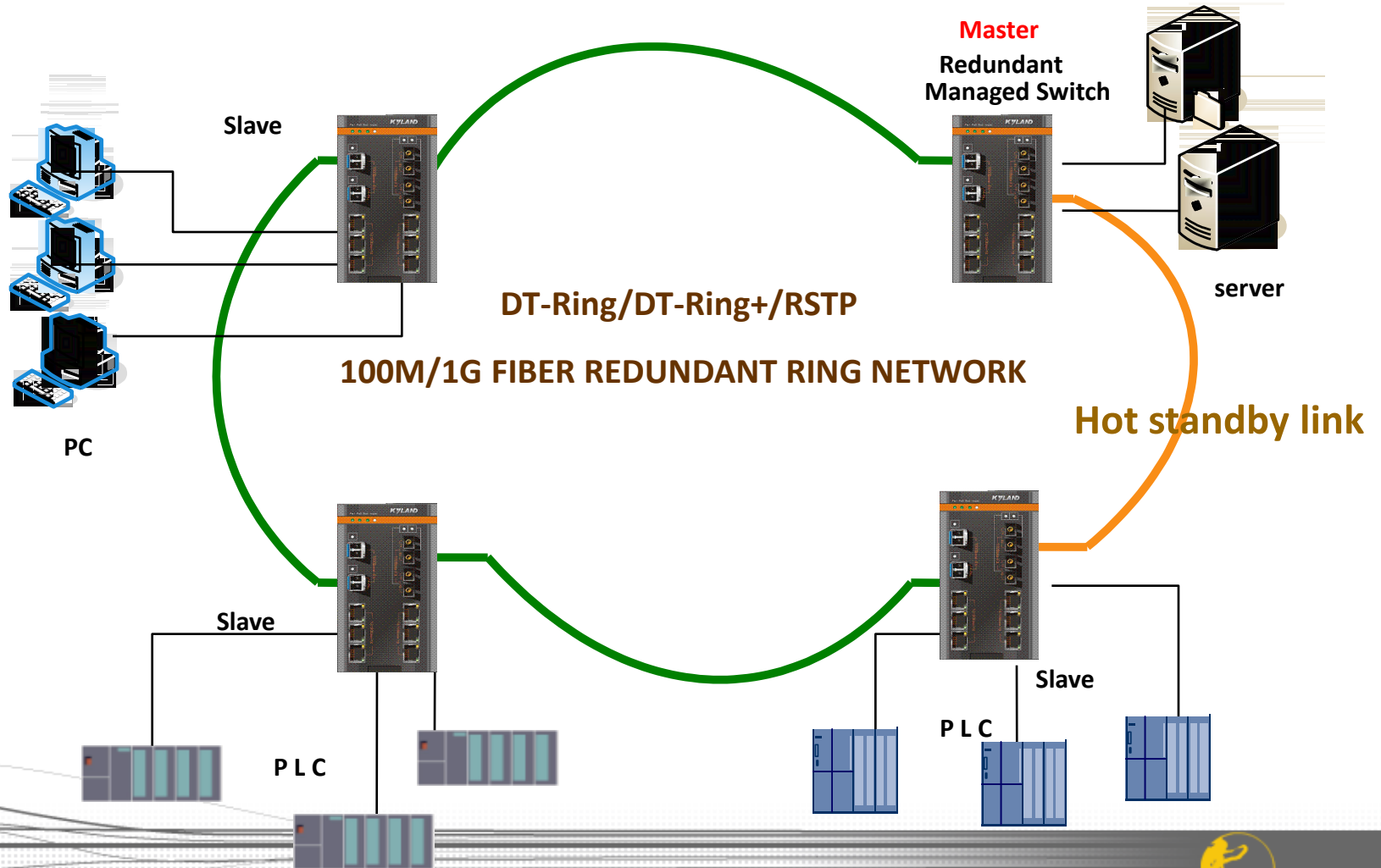


SSH Server Configure

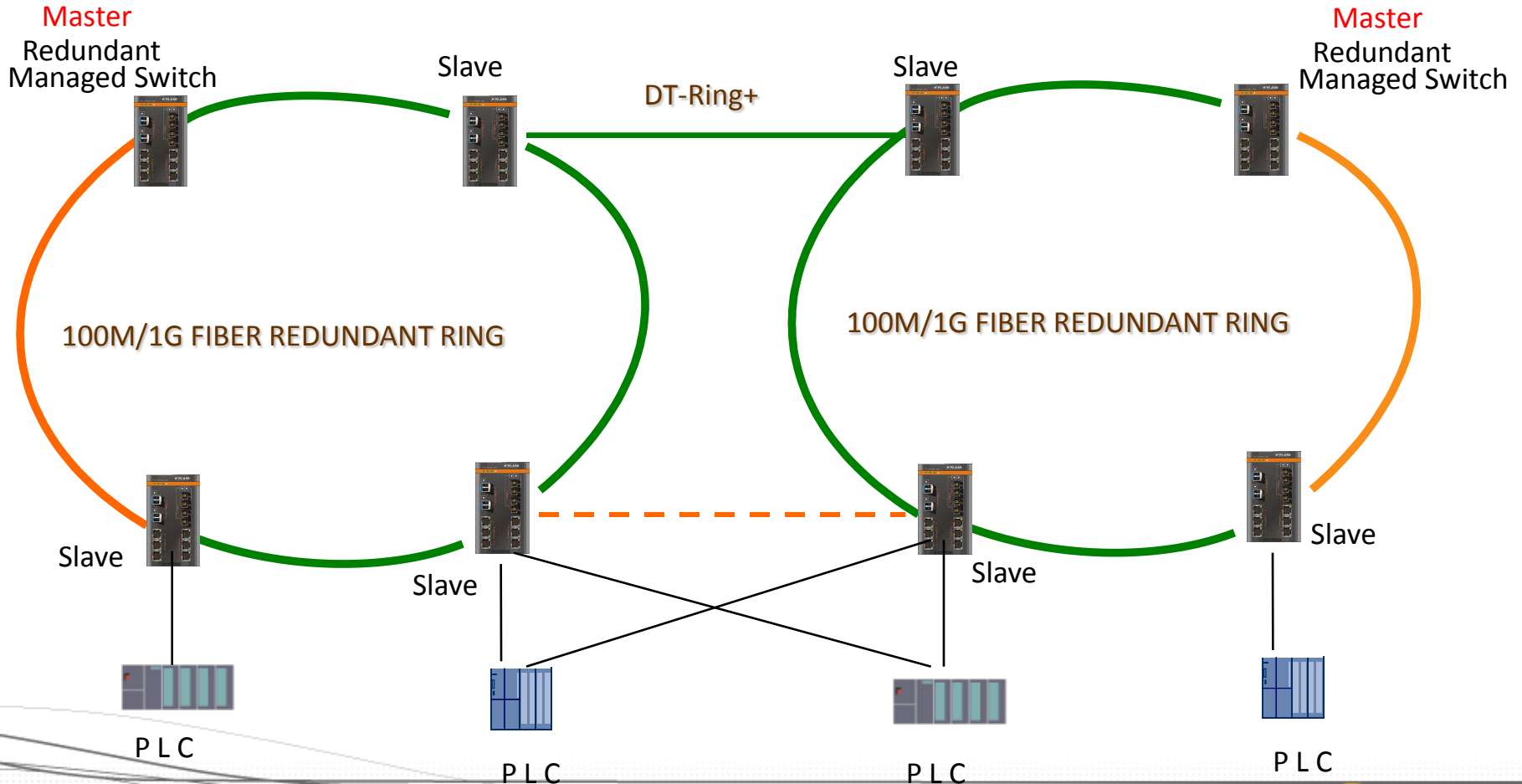
SSH State	Disable
Authentication Retry Times	10 (1-10)
Time Out	300 (60-300)s
Local Key Pair	<input type="button" value="Create"/> <input type="button" value="Destroy"/>
Local Key Value	NULL

DT-Ring

Recovery time < 50ms



DT-Ring+ Tangent Ring

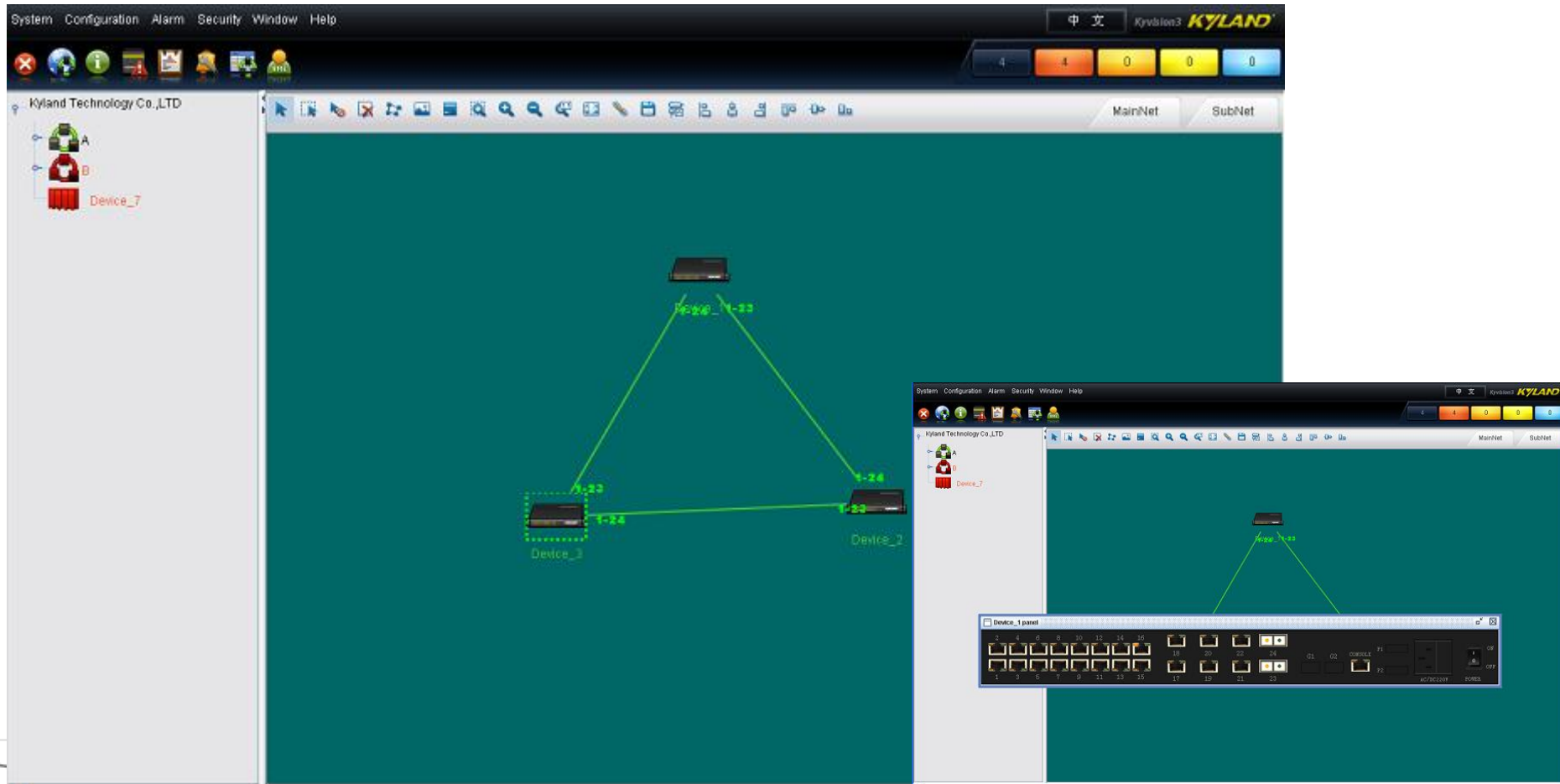


Comparison of STP, RSTP, K-RSTP, DT-Ring and DT-Ring+ with Proprietary Solutions

Protocol	Vendor	Can be used in multi-vendor environment	Max Bridge Diameter	Topology	Single ring link failover time (for different number of switches)		
					10	15	20
STP	IEEE Standard	Yes	40	Any	>30s		
RSTP(802.1w)	IEEE Standard	Yes	40	Any	Several Seconds		
HiPER Ring	Hirschmann	No	Virtually Unlimited	Ring	200-500ms, independent of number of switches		
Turbo Ring	Moxa	No	Virtually Unlimited	Ring	<200ms	<250ms	<300ms
S-Ring	GarrettCom	No	N/A	Ring	<250ms		
RS-Ring	GarrettCom	No	N/A	Ring	<100ms		
RapidRing™	Contemporary Controls	No	50	Ring	<300ms		
RSTP(802.1D-2004)	IEEE Standard	Yes	40	Any	<50ms	<75ms	<100ms
eRSTP™	RuggedCom	Yes	160	Any	<50ms	<75ms	<100ms
K-RSTP	Kyland	Yes	38	Any	<60ms	<150ms	<300ms
DT-Ring	Kyland	No	Virtually Unlimited	Ring	<35ms	<40ms	<50ms
DT-Ring+	Kyland	No	Virtually Unlimited	Ring	<40ms	<45ms	<50ms

Powerful Kyvision Management Software

Customized Design on Demand



KEMA: IEC61850, IEEE1613



REPORT OF PERFORMANCE

08-1441

OBJECT	Ethernet Switch		
TYPE	SICOM3024P	SERIAL No.	See chapter 1
	Uaux : 220 VAC; 220 VDC		
MANUFACTURER	Kyland Technology Co. Ltd. Beijing, China		
CLIENT	Kyland Technology Co. Ltd. Beijing, China		
TESTED BY	KEMA HIGH-VOLTAGE LABORATORY Amhem, the Netherlands		
DATES OF TESTS	27 October until 26 November 2008		
TEST PROGRAMME	Selected tests in accordance with IEC 61850-3 (2002-01) and IEEE 1613 (2003) (see page 2).		
SUMMARY AND CONCLUSION	The tests were passed		

This Report of Performance applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.

This report consists of 50 pages in total.

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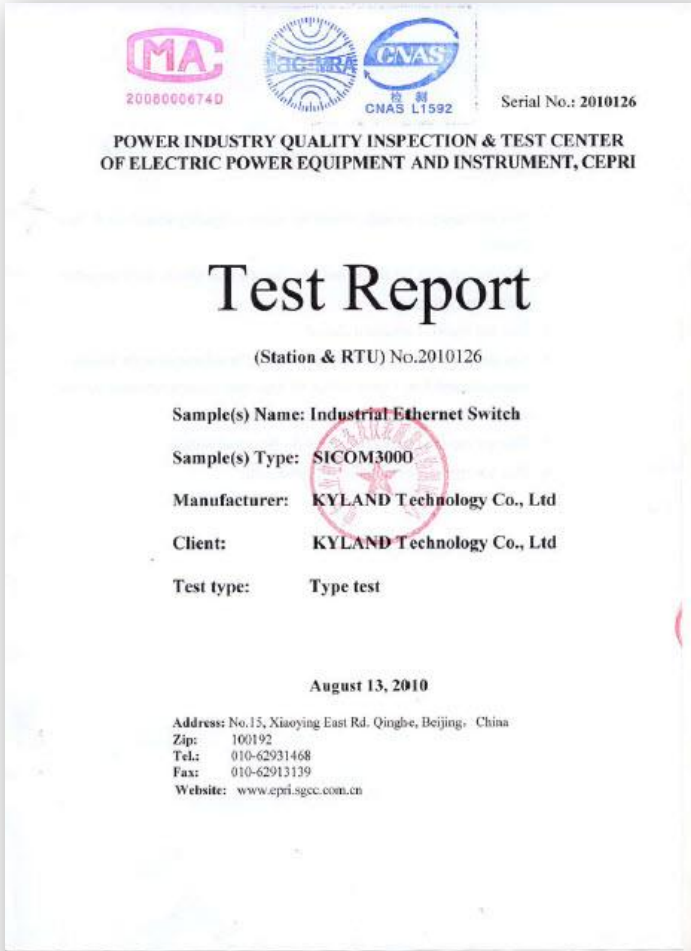
KEMA Nedstring B.V.

P. J. A. Bui
KEMA T&D Testing Services
Managing Director

Amhem, 3 February 2009

Kyland SICOM3000 series, SICOM3024P series and other SICOM series are using the same switching chip solution and CPU management system design. All the technical features associated with IEC61850 standard such as the features for harsh environments, features for electro magnetic compatibility, and features for communication are all the same.

CEPRI: IEC61850-3 compliance



The image shows a test report from CEPRI. At the top left, there are three logos: MA (20080006740), CEMRA, and CNAS (CNAS L1592). To the right of these logos is the text 'Serial No.: 2010126'. Below the logos is the text 'POWER INDUSTRY QUALITY INSPECTION & TEST CENTER OF ELECTRIC POWER EQUIPMENT AND INSTRUMENT, CEPRI'. The main title is 'Test Report' in a large, bold font. Below the title is '(Station & RTU) No.2010126'. The report details the sample name as 'Industrial Ethernet Switch', the sample type as 'SICOM3000', the manufacturer as 'KYLAND Technology Co., Ltd', and the client as 'KYLAND Technology Co., Ltd'. The test type is listed as 'Type test'. The date of the test is 'August 13, 2010'. At the bottom, the address is 'No.15, Xiaoying East Rd. Qinghe, Beijing, China', with contact information for zip, telephone, fax, and website.

Serial No.: 2010126

POWER INDUSTRY QUALITY INSPECTION & TEST CENTER
OF ELECTRIC POWER EQUIPMENT AND INSTRUMENT, CEPRI

Test Report

(Station & RTU) No.2010126

Sample(s) Name: Industrial Ethernet Switch

Sample(s) Type: SICOM3000

Manufacturer: KYLAND Technology Co., Ltd

Client: KYLAND Technology Co., Ltd

Test type: Type test

August 13, 2010

Address: No.15, Xiaoying East Rd. Qinghe, Beijing, China
Zip: 100192
Tel.: 010-62931468
Fax: 010-62913139
Website: www.epri.sgcc.com.cn

CEPRI:

China Electric Power Research Institute

<http://www.epri.sgcc.com.cn/en/>

Chinese authority for testing on the devices for power utilities.

SICOM3000 has passed CEPRI's tests for full compliant with IEC61850.

You may download CEPRI test report here:

<http://www.kyland.cn/admin/uploadfile/20100817102551552.pdf>

Successful Application

Areva 230/34.5KV Power Substation in Costa Rica



SE Zona Franca

SE El Bosque

CENCE IEC 870-5-101

SBDS +SBDS

GPS SEL 2407

UCS SMP-16

KIEN6000

SICOM3000

1

3








Modulo de Alarmas Generales y PI

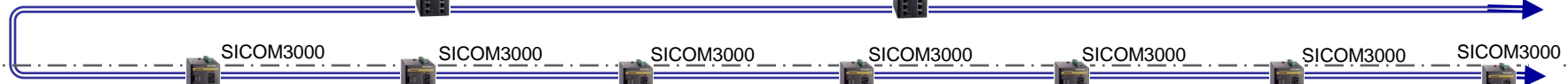
PI +PI

SEL 451-4

SICOM3000

2

-  IEC61850 (FO)
-  IEC 61850 / TELNET (UTP)
-  IEC 60870-5-101/104
-  IRIGB
-  Interconnection (FO SM 40km)
-  Protocolo ION / NTP
-  TELNET



+TP5

SEL421

SEL421

Extremo Línea Solo suministro

SEL421

+TP2

SEL421

Extremo Línea Solo suministro

SEL421

+TC1

SEL 451-4

SEL 451-4

SEL 451-4

+TC2

SEL 451-4

SEL 451-4

SEL 451-4

+TP3

SEL 387E

SEL 451-2

SEL 352-1

+TP6

SEL 387E

SEL 451-2

SEL 352-1

+TCP

ATR1

TAPCON 230

CANBUS

ATR2

TAPCON 230

SEL 2411

+TP1

SEL 487B

+TP4

SEL 487B

Highlights

- User's reference offered by Areva Colombia for applying SICOM3000 in their power projects.



Successful Application

SCADA System of Xinjiang Dabancheng Wind Power Plant

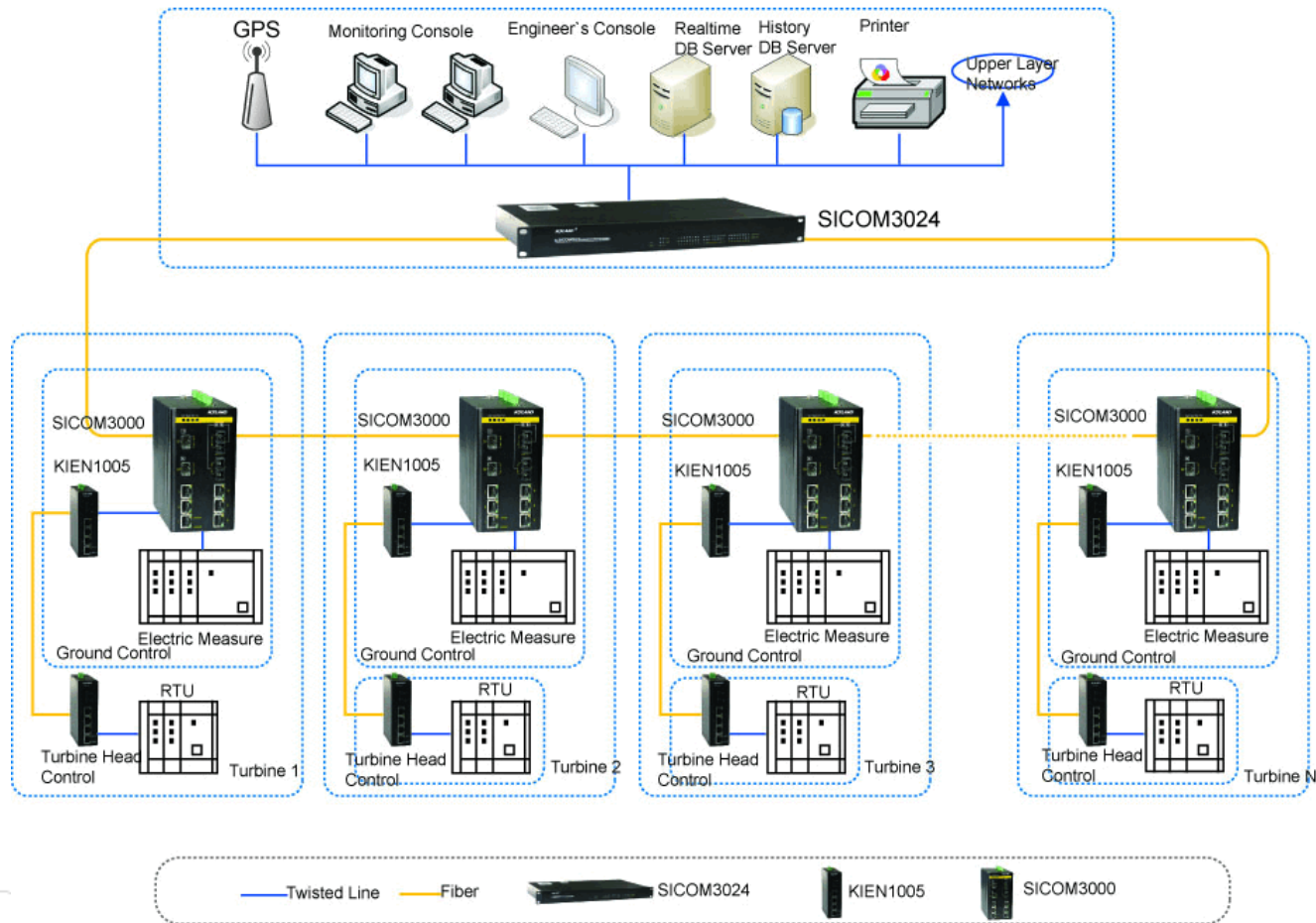


新疆风力发电厂

Photo By 准格尔王

Successful Application

The Control System of Wind Power



Highlights

- We won this wind power project located in Xinjiang province, which is extremely cold in the winter. Our customer requires that our products could boot under -40° C . Only Kyland products can meet this requirement and win this 1000 pieces big project.

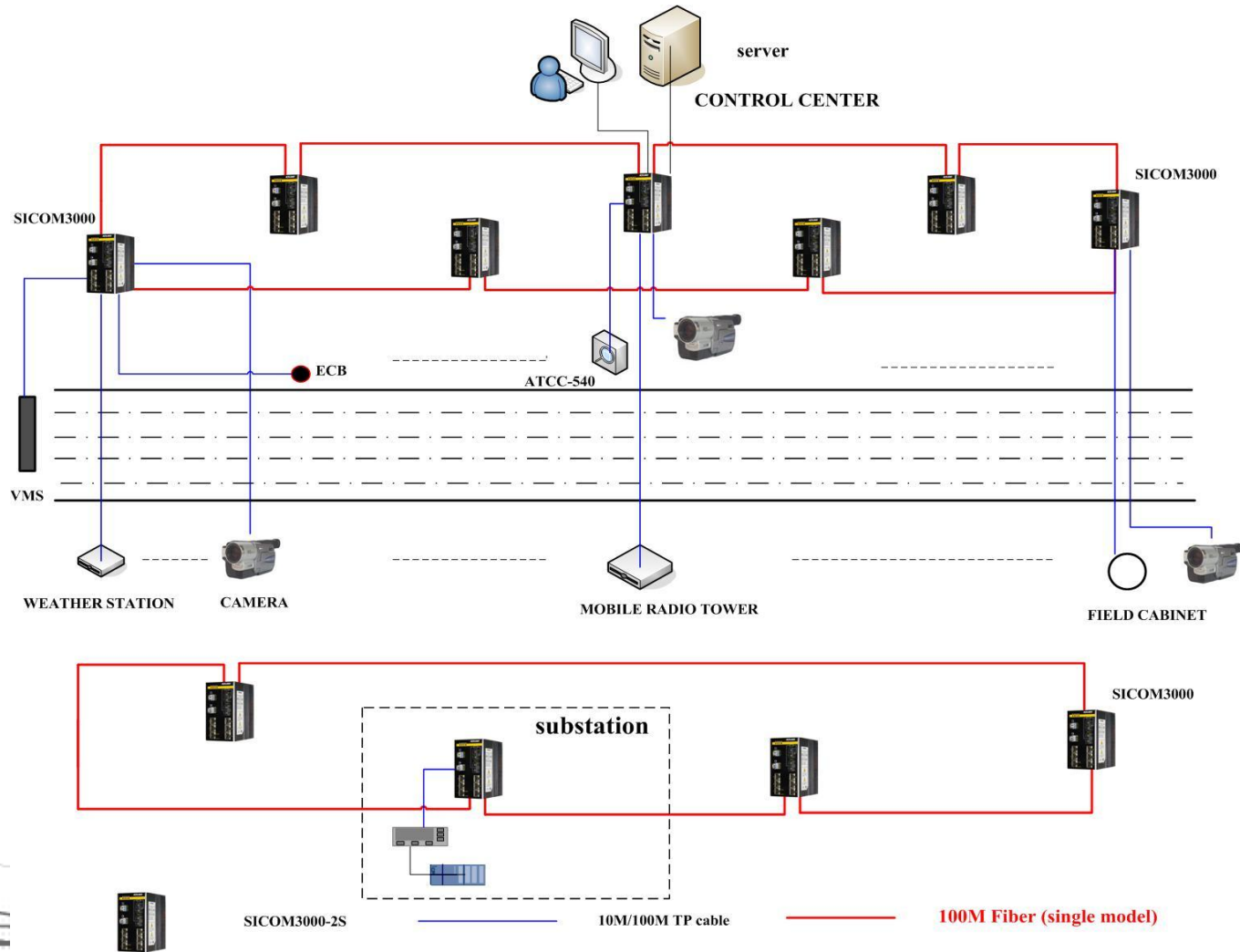
Successful Application

Substation & Environment Monitoring System of Highway Surat of India



Successful Application

Substation & Environment Monitoring System of Highway Surat of India



Highlights

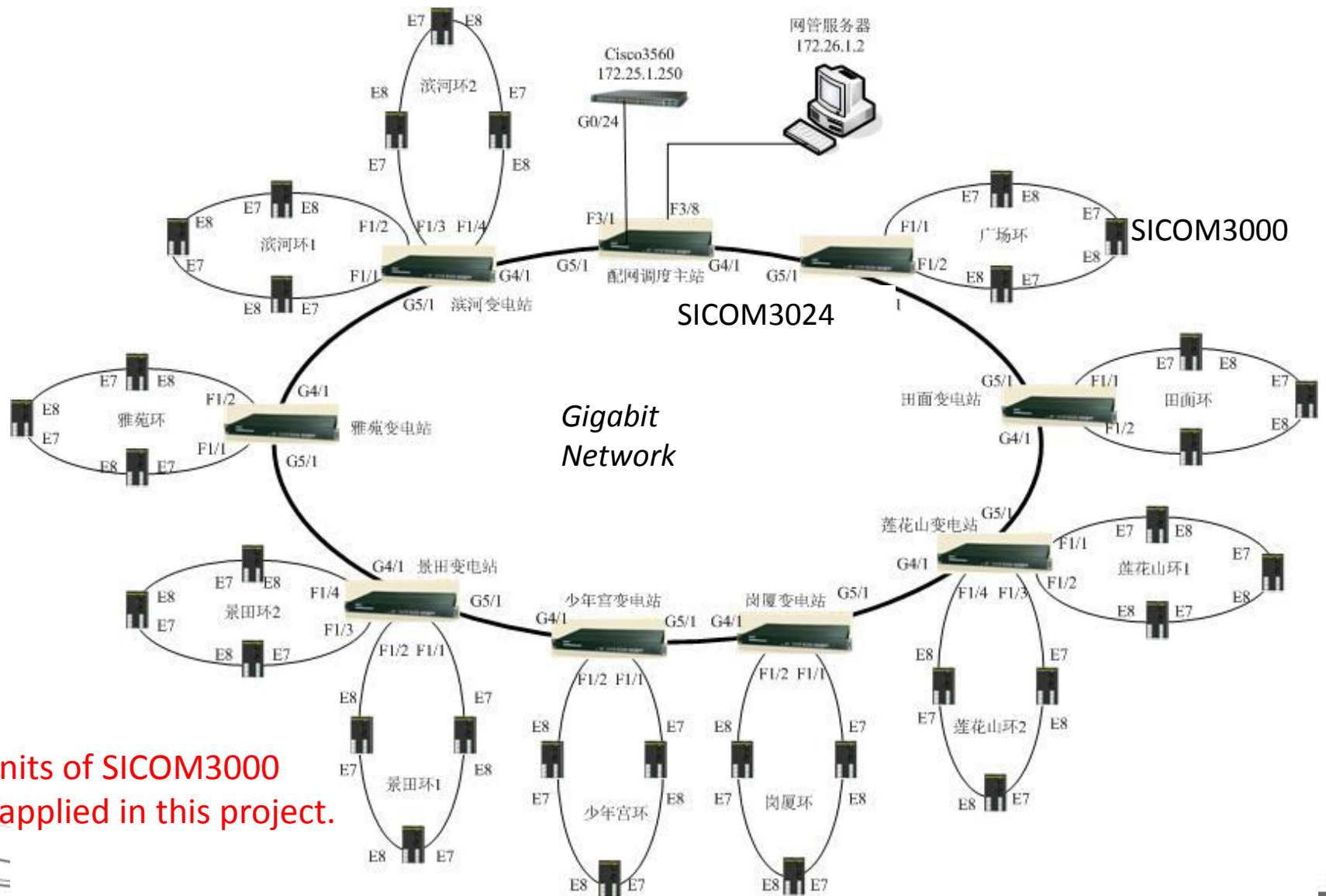
- There are more than 200 units of our SICOM3016, SICOM3000 and KIEN2000 applied in Surat Highway Monitoring System.
- Our switches are working under very harsh environment with high temperature (+70° C under the sunlight) and high humidity.

Successful Application

Shenzhen Distribution Network Automation



Shenzhen Distribution Network Automation



2K units of SICOM3000 are applied in this project.

User's Reference 1

用户使用证明

我公司在南京地铁二号线一期工程供电系统 SCADA 及变电所综合自动化供货系统中提供北京东土科技股份有限公司生产的工业交换机 SICOM3024 SICOM3000 运行使用,一切良好,完全满足项目需要,

特此证明!

南京日新机电有限公司



Project: Nanjing 2# Subway SCADA and Substation System

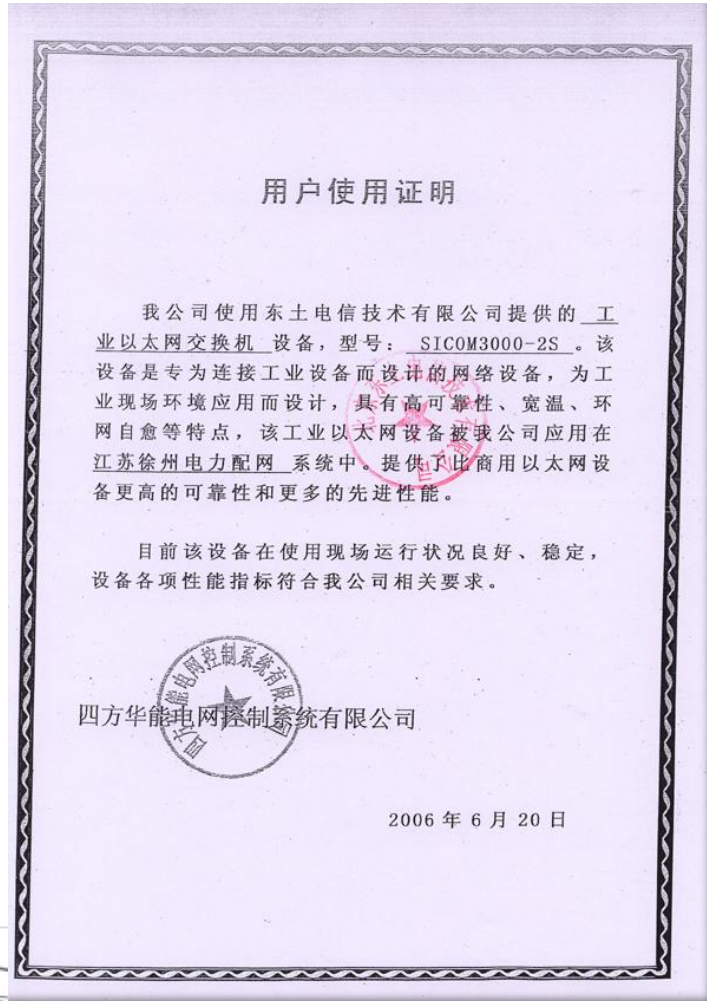
Product: SICOM3024, SICOM3000

Content:

Nanjing Rixin Electric Company Ltd.

Kyland SICOM3024 and SICOM3000 performs perfect in the Electric SCADA and Substation System of Nanjing 2# Subway Phase I project, and they fully meet our requirements.

User's Reference 2



Project: Jiangsu Province Xuzhou Electric Power Distribution Network

Product: SICOM3000

Content:
Sifang&Huaneng Power System Control Co., Ltd.

Kyland SICOM3000-2S supports high reliability, wide temperature range, fast recovery ring, and its good performance enable it a best choice for harsh environment.

User's Reference 3

Project: Wuzi Highway Tunnel Monitoring System

Product: SICOM3000

Content:
Shanxi Hantang Computer Co., Ltd.

Kyland SICOM3000 offers solid performance under industrial harsh environments and fully meet our requirements for reliability.

用户使用证明

我公司使用东土电信技术有限公司提供的工业以太网交换机设备，型号：SICOM3000。该设备是专为连接工业设备而设计的网络设备，为工业现场环境应用而设计，具有高可靠性、宽温、环网自愈等特点，该工业以太网设备被我公司应用在吴子高速隧道监控系统中。提供了比商用以太网设备更高的可靠性和更多的先进性能。

目前该设备在使用现场运行状况良好、稳定，设备各项性能指标符合我公司相关要求。

用户代表签字：

日

期：

(盖章)

测试人员签字：

日

期：

Other Successful Applications of SICOM3000

- Colombia Radio Communication System
- United States Electric Power Distribution System
- Brazil Electric Power Distribution System
- Thailand Dam Monitoring System
- Russia Transportation Project

Thanks for your attention.

www.kyland.cn