

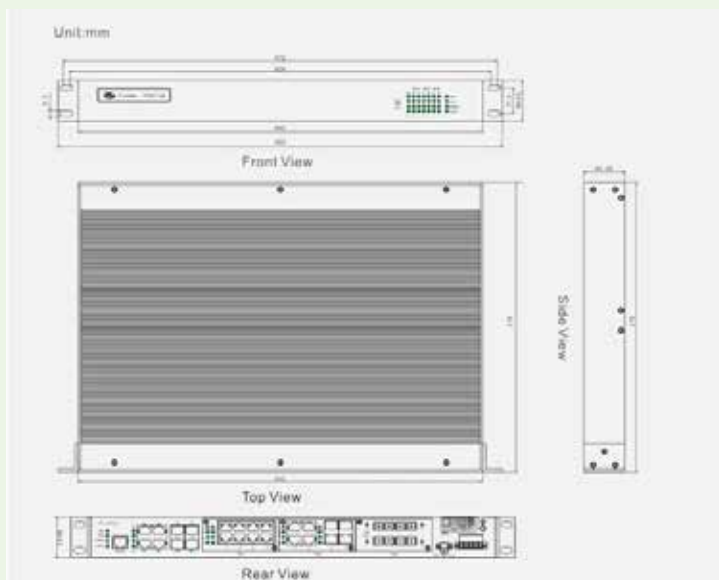
## ST-9013-FI Series Modularized Advanced Managed Industrial Ethernet Switch



### Fiber Industrial Switches

## Overview

ST-9013-FI series are modularized advanced managed gigabit L3 switches. They comply with industrial standards such as the communication network of IEC 61850-3 and IEEE 1613. Hence they fully meet the requirements of intelligent substations. They can provide 24/48 VDC or 110/220 VDC/VAC redundant power input, which make the power supply on-site more flexible. Rear panel cabling design can meet the requirements of power system so that they can be widely applied in the industrial fields such as electrical power, transportation and energy.



## Features

- Support L3 multiple dynamic routing protocols such as RIP v1/v2, OSPFv2 and BGPv4, static routes and IP policy routing.
- Support multicast routing protocols such as PIM-SM, PIM-DM and DVMRP
- Support DHCP Option 82 for distributing IP addresses through different policies
- Transmit multicast packets such as packets about IEC 61850 GOOSE or sampling value
- Support proprietary ring protocol and RSTP/STP/MSTP(IEEE 802.1w/D/s)
- Support IGMP Snooping for<001F>filtering multicast traffic
- Support port-based VLAN, IEEE 802.1Q VLAN and GVRP to perform network management easily
- Enhance the decision mechanism through QoS--IEEE 802.1p/1Q and ToS/DiffServ
- Adopt 802.3ad and LACP to optimize the network bandwidth
- Support IEEE 802.1X, HTTPS and SSL to enhance network security
- Support SNMP v1/v2c/v3 for different levels of network management
- Provide internal diagnosis to facilitate trouble location and removal
- Lock ports to allow only the authorized MAC address to access

# ST-9013-FI Series

## Features

- Support powerful ACL and hardware L2 to L7 data filtration
- Support multi-port mirror for online debugging
- Export alarms about abnormal events through Email, systematic audio prompt or relay
- Support the alarm of the power-off event through the remote hardware or software
- Debug and configure through Web browser, Telnet or serial console
- Support LLDP for network topology discovery
- Support the port loopback protection function that effectively avoids the ring storm
- Prevent attacks and common viruses

## Specifications

### ● Standards:

IEEE 802.3 10BaseT  
IEEE 802.3u 100BaseTX 100Base FX  
IEEE 802.3ab 1000BaseTX  
IEEE 802.3z 1000BaseSX/LX/LHX/ZX  
IEEE 802.3x flow control  
IEEE 802.1D STP  
IEEE 802.1w RSTP  
IEEE 802.1s MSTP  
IEEE 802.1Q VLAN Tagging  
IEEE 802.1p Class of Service  
IEEE 802.1X Authentication  
IEEE 802.3ad Port Trunk with LACP

### ● Power Requirements:

Input Voltage and Max Input Current:  
24/48 VDC (18 to 60 V), 2.5A @24VDC; 1.5 A@48VDC  
110/220 VDC (88 to 300V), 0.6A @110VDC; 0.35 A@220VDC  
110/220 VAC (90 to 254V), 1A @110VAC; 0.5 A@220VAC  
Power consumption: maximum 45 Watts  
Overload Current Protection: Present  
Reverse Polarity Protection: Present  
Power Connector: 5-contact terminal block  
Relay Connector: 2-contact terminal block

### ● Protocols:

IGMP V1/V2/V3, GVRP, SNMPV1/V2C/V3, DHCP client, DHCP Option 82, TFTP, SMTP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog, SNMP Server/Client

### ● Physical Characteristics:

Housing: Metal, IP40 protection  
Dimensions (W\*H\*D): 440 x 44 x 325 mm  
Weight: 5900g  
Installation: 19-inch 1U rack installation

### ● Environmental Limits:

Operating Temperature: -40 to 85°C (-40 to 185°)  
Storage Temperature: -40 to +85°C (-40 to 185°)  
Ambient Relative Humidity: 5 to 95% (non-condensing)

### ● MIB:

MIB-II, Ethernet-Like MIB, P-BRIDGE MIB, Q-BRIDGE MIB, Bridge MIB, RSTP MIB, Private/RMON MIB, Group 1,2,3,9

### ● Flow Control:

IEEE 802.3x flow control, back pressure flow control

### ● Switch Properties:

Priority Queues: 4  
Max. Number of Available VLANs: 4094  
VLAN ID Range: VID 1 to 4094  
IGMP Groups: 256  
MAC Table Size: 8K

### ● Interface

Uplink: 4 x RJ45/SFP Combo ports  
RJ45: 10/100/1000BaseT auto negotiation  
SFP slots: 100BaseFX or 1000BaseX  
Downlink: 10/100BaseTX auto negotiation or 100BaseFX SFP slots  
Console Port: RS-232(RJ45 connector)  
Alarm Contact: 1 relay outputs with current carrying capacity of 1A@24VDC

### ● Certifications:

Electric automation: IEC 61850-3 IEEE 1613 IEC61000-6-2  
EMI: FCC Part 15 EN55022 class A  
EMS: IEC (EN) 61000-4-2 (ESD), level 4  
IEC (EN) 61000-4-3 (electromagnetic field RS), level 4  
IEC (EN) 61000-4-4 (EFT), level 4  
IEC (EN) 61000-4-5 (Surge), level 4  
IEC (EN) 61000-4-6 (RFT), level 4  
IEC (EN) 61000-4-9 (impulse magnetic field), level 4  
IEC (EN) 61000-4-8, 100A/m continuous  
IEC (EN) 61000-4-10 (damp oscillation magnetic field)  
IEC (EN) 61000-4-11 (AC power temporary decrease, temporary immunity interruption)  
Shock: IEC 60068-2-27  
Freefall: IEC 60068-2-32  
Vibration: IEC 60068-2-6

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\* Specs and Pictures of the product can be revised according to R&D

\* Products design in UK.

[www.spiktel.co.uk](http://www.spiktel.co.uk)

[www.spiktel.com](http://www.spiktel.com)

[Enquiry: sales@spiktel.com](mailto:sales@spiktel.com)

### Corporate Office

#### UK

SPIKTEL TECHNOLOGIES LLC.  
179B Norwood Road Southall Middlesex UK UB2 4JD  
Tel:+44-0208-8432233, Fax: +44-0208-5742244

### Branches

#### HongKong

SPIKTEL INTERNATIONAL CO. LTD.  
801, 8/F, Opulent Bldg.,  
402-406 Hennessy Rd., Wanchai, Hong Kong  
Tel: +852- 2893 8228 Fax: +852- 2893 1822

#### India

SPIKTEL TECHNOLOGIES PVT. LTD.  
F-23, Roshanara Complex, Roshanara Road,  
Delhi-110007 Tel:- +91-11-23824050, 64704050

#### Dubai

SPIKTEL TECHNOLOGIES MEA  
New Al Kuwaitat, Street 8, Villa 2B, AL AIN , UAE  
P.O. Box. 13787, Tel/Fax: +9713-03-7377053